HISTORY OF ART IN CHALDÆA AND ASSYRIA

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A HISTORY OF ART

IN

CHALDÆA AND ASSYRIA.

A HISTORY

OF

Art in Chaldæa & Assyria

FROM THE FRENCH

OF

GEORGES PERROT,

PROFESSOR IN THE FACULTY OF LETTERS, PARIS; MEMBER OF THE INSTITUTE,

AND

CHARLES CHIPIEZ.

ILLUSTRATED WITH FOUR HUNDRED AND FIFTY-TWO ENGRAVINGS IN THE TEXT AND FIFTEEN STEEL AND COLOURED PLATES.

IN TWO VOLUMES.—VOL. I.

TRANSLATED AND EDITED BY

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PREFACE.

In face of the cordial reception given to the first two volumes of MM. Perrot and Chipiez's History of Ancient Art, any words of introduction from me to this second instalment would be presumptuous. On my own part, however, I may be allowed to express my gratitude for the approval vouchsafed to my humble share in the introduction of the History of Art in Ancient Egypt to a new public, and to hope that nothing may be found in the following pages to change that approval into blame.

W. A.

October 10, 1883.

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CHAPTER I.

THE GENERAL CHARACTERISTICS OF CHALDÆO-ASSYRIAN CIVILIZATION.

§ 1. *Situation and Boundaries of Chaldæa and Assyria.*

THE primitive civilization of Chaldæa, like that of Egypt, was cradled in the lower districts of a great alluvial basin, in which the soil was stolen from the sea by long continued deposits of river mud. In the valley of the Tigris and Euphrates, as in that of the Nile, it was in the great plains near the ocean that the inhabitants first emerged from barbarism and organized a civil life. As the ages passed away, this culture slowly mounted the streams, and, as Memphis was older by many centuries than Thebes, in dignity if not in actual existence, so Ur and Larsam were older than Babylon, and Babylon than Nineveh. The manners and beliefs, the arts and the written characters of Egypt were carried into the farthest recesses of Ethiopia, partly by commerce but still more by military invasion; so too Chaldaic civilization made itself felt at vast distances from its birth-place, even in the cold valleys and snowy plateaux of Armenia, in districts which are separated by ten degrees of latitude from the burning shores where the fish god Oannes showed himself to the rude fathers of the race, and taught them "such things as contribute

to the softening of life."[1] In Egypt progressive development took place from north to south, while in Chaldæa its direction was reversed. The apparent contrast is, however, but a resemblance the more. The orientation, if such a term may be used, of the two basins, is in opposite directions, but in each the spread of religion with its rites and symbols, of written characters with their adaptation to different languages, and of all those arts and processes which, when taken together, make up what we call civilization, advanced from the seaboard to the river springs.

In these two countries the conscience of man seems to have been first awakened to his innate power of bettering his own condition by well directed observation, by the elaboration of laws, and by forethought for the future. Between Egypt on the one hand, and Chaldæa with that Assyria which was no more than its off-shoot and prolongation, on the other, there are strong analogies, as will be clearly seen in the course of our study, but there are also differences that are not less appreciable. Professor Rawlinson shows this very clearly in a page of descriptive geography which he will allow us to quote as it stands. It will not be the last of our borrowings from his excellent work, *The Five Great Monarchies of the Ancient Eastern World*, a book that has done so much to popularize the discoveries of modern scholars.[2]

"The broad belt of desert which traverses the eastern hemisphere, in a general direction from west to east (or, speaking more exactly, of W.S.W. to N.E.E.) reaching from the Atlantic on the one hand nearly to the Yellow Sea on the other, is interrupted about its centre by a strip of rich vegetation, which at once breaks the continuity of the arid region, and serves also to mark the point where the desert changes its character from that of a plain at a low level to that of an elevated plateau or table-land. West of the favoured district, the Arabian and African wastes are seas of land seldom raised much above, often sinking below the level of the ocean; while east of the same, in Persia, Kerman, Seistan, Chinese Tartary, and Mongolia, the desert consists of a series of plateaux,

[1] Berosus, fragment No. 1, in the *Essai de Commentaire sur les Fragments cosmogoniques de Bérose d'après les Textes cunéiformes et les Monuments de l'Art Asiatique* of Francois Lenormant (Maisonneuve, 1871, 8vo.).

[2] *The Five Great Monarchies of the Ancient Eastern World; or, The History, Geography, and Antiquities of Chaldæa, Assyria, Babylon, Media, and Persia. Collected and Illustrated from Ancient and Modern Sources*, by George Rawlinson. Fourth edition, 3 vols., 8vo., with Maps and Illustrations (Murray, 1879).

having from 3,000 to nearly 10,000 feet of elevation. The green and fertile region which is thus interposed between the 'highland' and 'lowland' deserts,[1] participates, curiously enough, in both characters. Where the belt of sand is intersected by the valley of the Nile, no marked change of elevation occurs; and the continuous low desert is merely interrupted by a few miles of green and cultivable surface, the whole of which is just as smooth and as flat as the waste on either side of it. But it is otherwise at the more eastern interruption. Then the verdant and productive country divides itself into two tracts, running parallel to each other, of which the western presents features, not unlike those that characterize the Nile valley, but on a far larger scale; while the eastern is a lofty mountain region, consisting for the most part of five or six parallel ranges, and mounting in many places far above the level of perpetual snow.

"It is with the western or plain tract that we are here concerned. Between the outer limits of the Syro-Arabian desert and the foot of the great mountain range of Kurdistan and Luristan intervenes a territory long famous in the world's history, and the chief site of three out of the five empires of whose history, geography, and antiquities, it is proposed to treat in the present volumes. Known to the Jews as Aram-Naharaim, or 'Syria of the two rivers'; to the Greeks and Romans as Mesopotamia, or 'the between-river country'; to the Arabs as Al-Jezireh, or 'the island,' this district has always taken its name from the streams which constitute its most striking feature, and to which, in fact, it owes its existence. If it were not for the two great rivers—the Tigris and Euphrates—with their tributaries, the more northern part of the Mesopotamian lowland would in no respect differ from the Syro-Arabian desert on which it adjoins, and which, in latitude, elevation, and general geological character, it exactly resembles. Towards the south the importance of the rivers is still greater; for of Lower Mesopotamia it may be said, with more truth than of Egypt,[2] that it is 'an acquired land,' the actual 'gift' of the two streams which wash it on either side; being as it is, entirely a recent formation—a deposit which the streams have made in the shallow waters of a gulf into which they have flowed for many ages.[3]

[1] HUMBOLDT, *Aspects of Nature*, vol. i. pp. 77, 78.—R.

[2] HERODOTUS, ii. 5.

[3] LOFTUS'S *Chaldæa and Susiana*, p. 282.—R.

"The division, which has here forced itself upon our notice, between the Upper and the Lower Mesopotamian country, is one very necessary to engage our attention in connection with ancient Chaldæa. There is no reason to think that the term Chaldæa had at any time the extensive signification of Mesopotamia, much less that it applied to the entire flat country between the desert and the mountains. Chaldæa was not the whole, but a part, of the great Mesopotamian plain; which was ample enough to contain within it three or four considerable monarchies. According to the combined testimony of geographers and historians,[1] Chaldæa lay towards the south, for it bordered upon the Persian Gulf, and towards the west, for it adjoined Arabia. If we are called upon to fix more accurately its boundaries, which, like those of most countries without strong natural frontiers, suffered many fluctuations, we are perhaps entitled to say that the Persian Gulf on the south, the Tigris on the east, the Arabian desert on the west, and the limit between Upper and Lower Mesopotamia on the north, formed the natural bounds, which were never greatly exceeded, and never much infringed upon. These boundaries are for the most part tolerably clear, though the northern only is invariable. Natural causes, hereafter to be mentioned more particularly, are perpetually varying the course of the Tigris, the shore of the Persian Gulf and the line of demarcation between the sands of Arabia and the verdure of the Euphrates valley. But nature has set a permanent mark, half way down the Mesopotamian lowland, by a difference of a geological structure, which is very conspicuous. Near Hit on the Euphrates, and a little below Samarah on the Tigris,[2] the traveller who descends the streams, bids adieu to a somewhat waving and slightly elevated plain of secondary formation, and enters on the dead flat and low level of the new alluvium. The line thus formed is marked and invariable; it constitutes the only natural division between the upper and lower portions of the

[1] See Strabo, xvi. 1, § 6; Pliny, H.N. vi. 28; Ptolemy, v. 20; Berosus, pp. 28, 29.—R.

[2] Ross came to the end of the alluvium and the commencement of the secondary formation in lat. 34°, long. 44° (*Journal of Geographical Society*, vol. ix. p. 446). Similarly, Captain Lynch found the bed of the Tigris change from pebbles to mere alluvium near Khan Iholigch, a little above its confluence with the Aahun (*Ib.* p. 472). For the point where the Euphrates enters on the alluvium, see Fraser's *Assyria and Mesopotamia*, p. 27.—R.

valley; and both probability and history point to it as the actual boundary between Chaldæa and her northern neighbour." [1]

Whether the two States had independent and separate life, or whether, as in after years, one of the two had, by its political and military superiority reduced the other to the condition of a vassal, the line of demarcation was constant, a line traced in the first instance by nature and rendered more rigid and ineffaceable by historical developments. Even when Chaldæa became nominally a mere province of Assyria, the two nationalities remained distinct. Chaldæa was older than Assyria. The centres of her civil life were the cities built upon the alluvial lands between the thirty-first and thirty-third degree of latitude. The most famous of these cities was Babylon. Those whom we call Assyrians, a people who rose to power and glory at a much more recent date, drew the seeds of their civilization from their more precocious neighbour.

These expressions, Assyria and Chaldæa, are now employed in a sense far more precise than they ever had in antiquity. For Herodotus Babylonia was a mere district of Assyria; [2] in his time both States were comprised in the Persian Empire, and had no distinct existence of their own. Pliny calls the whole of Mesopotamia Assyria.[3] Strabo carries the western frontier of Assyria as far as Syria.[4] To us these variations are of small importance. The geographical and historical nomenclature of the ancients was never clearly defined. It was always more or less of a floating quantity, especially for those countries which to Herodotus or Diodorus, to Pliny or to Tacitus, were dimly perceptible on the extreme limits of their horizon.

It would, however, be easy to show that in assigning a more definite value to the terms in question—a proceeding in which we have the countenance of nearly every modern historian—we do not detach them from their original acceptation; at most we give them more constancy and precision than the colloquial language of the Greeks and Romans demanded.[5] The expressions

[1] RAWLINSON. *The Five Great Monarchies*, &c., vol. i., pp. 1–4. As to the name and boundaries of Chaldæa, see also GUIGNAUT, *La Chaldée et les Chaldéens*, in the *Encyclopédie Moderne*, vol. viii.

[2] HERODOTUS, i. 106, 192; iii. 92.

[3] PLINY, *Nat. Hist.* vi. 26.

[4] STRABO, xvi. i. § 1.

[5] *Genesis* xi. 28 and 31; *Isaiah* xlvii. 1; xiii. 19, &c.; DIODORUS ii. 17; PLINY, *Nat. Hist.* vi. 26; the Greek translators of the Bible rendered the Hebrew term Khasdim by χαλδαῖοι; both forms seem to be derived from the same primitive word.

Khasdim and *Chaldæi* were used in the Bible and by classic authors mainly to denote the inhabitants of Babylon and its neighbourhood; and we find Strabo attaching with precision the name *Aturia*, which is nothing but a variant upon Assyria, to that district watered and bounded by the Tigris in which Nineveh was situated.[1] Our only aim is to adopt, once for all, such terms as may be easily understood by our readers, and may render all confusion impossible between the two kingdoms, between the people of the north and those of the south.

In order to define Assyria exactly we should have to determine its frontiers, and that we can only do approximately. As the nation grew its territory extended in certain directions. To the east, however, where the formidable rampart of the Zagros forbade all progress, no such extension took place. Those lofty and precipitous chains which we now call the mountains of Kurdistan, were only to be crossed in two or three places, and by passes which during their few months of freedom from snow and floods gave access to the high-lying plains of Media. These narrow defiles might well be traversed by an army in a summer campaign, but neither dwellings nor cultivated lands could invade such a district with success; at most they could take possession of the few spots of fertile soil which lay at the mouth of the lateral valleys; such, for example, was the plain of Arbeles which was watered by the great Zab before its junction with the Tigris. Towards the south there was no natural barrier, but in that direction all development was hindered by the density of the Chaldee population which was thickly spread over the country above Babylon and about the numerous towns and villages which looked towards that city as their capital. To the north, on the other hand, the wide terraces which mounted like steps from the plains of Mesopotamia to the mountains of Armenia offered an ample field for expansion. To the west there was still more room. Little by little rural and urban life overflowed the valley of the Tigris into that of the Chaboras or Khabour, the principal affluent of the Euphrates, until at last it reached the banks of the great western river itself. In all Northern Mesopotamia, between the hills of the Sinjar and the last slopes of Mount Masius, the Assyrians encountered only nomad tribes whom they could drive when they chose into the Syrian

[1] Strabo, xvi. i. 1, 2, 3.

desert. Over all that region the remains of artificial mounds have been found which must at one time have been the sites of palaces and cities. In some cases the gullies cut in their flanks by the rain discover broken walls and fragments of sculpture whose style is that of the Ninevitish monuments.[1]

In the course of their victorious career the Assyrians annexed several other states, such as Syria and Chaldæa, Cappadocia and Armenia, but those countries were never more than external dependencies, than conquered provinces. Taking Assyria proper at its greatest development, we may say that it comprised Northern Mesopotamia and the territories which faced it from the other bank of the Tigris and lay between the stream and the lower slopes of the mountains. The heart of the country was the district lying along both sides of the river between the thirty-fifth and thirty-seventh degree of latitude, and the forty-first and forty-second degree of longitude, east. The three or four cities which rose successively to be capitals of Assyria were all in that region, and are now represented by the ruins of Khorsabad, of Kouyoundjik with Nebbi-Younas, of Nimroud, and of Kaleh-Shergat. One of these places corresponds to *Ninos*, as the Greeks call it, or Nineveh, the famous city which classic writers as well as Jewish prophets looked upon as the centre of Assyrian history.

To give some idea of the relative dimensions of these two states Rawlinson compares the surface of Assyria to that of Great Britain, while that of Chaldæa must, he says, have been equal in extent to the kingdom of Denmark.[2] This latter comparison seems below the mark, when, compass in hand, we attempt to verify it upon a modern map. The discrepancy is caused by the continual encroachments upon the sea made by the alluvial deposits from the two great rivers. Careful observations and calculations have shown that the coast line must have been from forty to forty-five leagues farther north than it is at present when the ancestors of the Chaldees first appeared upon the scene.[3] Instead of flowing together as they do now to form what is called the *Shat-el-Arab*, the Tigris and Euphrates then fell into the sea at points some twenty leagues apart in a gulf which extended

[1] LAYARD, *Nineveh and its Remains*, vol. i. pp. 312, 315; *Discoveries*, p. 245.

[2] RAWLINSON, *Five Great Monarchies*, vol. i. pp. 4, 5.

[3] LOFTUS, in the *Journal of the Geographical Society*, vol. xxvi. p. 142; *Ib.*, Sir HENRY RAWLINSON, vol. xxvii. p. 186.

eastwards as far as the last spurs thrown out by the mountains of Iran, and westwards to the foot of the sandy heights which terminate the plateau of Arabia. "The whole lower part of the valley has thus been made, since the commencement of the present geological period, by deposits from the Tigris, the Euphrates, and such minor streams as the Adhem, the Gyndes, the Choaspes, streams which, after having long enjoyed an independent existence and having contributed to drive back the waters into which they fell, have ended by becoming mere feeders of the Tigris."[1] We see, therefore, that when Chaldæa received its first inhabitants it was sensibly smaller than it is to-day, as the district of which Bassorah is now the capital and the whole delta of the Shat-el-Arab were not yet in existence.

§ 2.—*Nature in the Basin of the Euphrates and Tigris.*

The inundation of the Nile gives renewed life every year to those plains of Egypt which it has slowly formed, and so it is with the Tigris and Euphrates. Lower Mesopotamia is entirely their creation, and if the time were to come when their vivifying streams were no longer to irrigate its surface, it would very soon be changed into a monotonous and melancholy desert. It hardly ever rains in Chaldæa.[2] There are a few showers at the changes of the season, and, in winter, a few days of heavy rain. During the summer, for long months together, the sky remains inexorably blue while the temperature is hot and parching. In winter, clouds are almost as rare; but winds often play violently over the great tracts of unbroken country. When these blow from the south they soon lose their warmth and humidity at the contact of a soil which, but a short while ago, was at the bottom of the sea, and is, therefore, in many places still strongly impregnated with salt which acts as a refrigerant.[3] Again, when the north wind comes down from the snowy summits of Armenia or Kurdistan, it is already cold enough, so that, during the months of December and January, it often happens that the

[1] Maspero, *Histoire Ancienne des Peuples de l'Orient*, p. 137.
[2] Herodotus, i. 193: Ἡ δὲ γῆ τῶν Ἀσσυρίων ψεται μὲν ὀλίγῳ.
[3] Loftus, *Susiana and Chaldæa*, i. vol. 8vo. 1857, London, p. 73.

mercury falls below freezing point, even in Babylonia. At daybreak the waters of the marshes are sometimes covered with a thin layer of ice, and the wind increases the effect of the low temperature. Loftus tells us that he has seen the Arabs of his escort fall benumbed from their saddles in the early morning.[1]

It is, then, upon the streams, and upon them alone, that the soil has to depend for its fertility; all those lands to which they never reach are doomed to barrenness and death. It is fortunate for the prosperity of the country through which they flow, that the Tigris and Euphrates swell and rise annually from their beds, not indeed like the Nile, almost on a stated day, but ever in the same season, about the commencement of spring. Without these periodical floods many parts of the plain of Mesopotamia would be beyond the reach of irrigation, but their regular occurrence allows water to be stored in sufficient quantities for use during the months of drought. To obtain the full advantage of this precious capital, the inhabitants must, however, take more care and expend more labour than is necessary in Egypt. The rise of the Euphrates and of the Tigris is neither so slow nor so regular as that of the Nile. The waters do not spread so gently over the soil, neither do they stay upon it so long;[2] since they have been abandoned to themselves as they are at present, a great part of them are lost, and, far from rendering a service to agriculture, they turn vast regions into dangerous hot-beds of infection.

It was to the west of the double basin that the untoward effects of the territorial conformation were chiefly felt. The valley of the Euphrates is not like that of the Nile, a canal hollowed out between two clearly marked banks. From the northern boundary of the alluvial plain to the southern, the slope is very slight, while from east to west, from the plains of Mesopotamia to the foot of the Arabian plateau, there is also an inclination. When the river is in flood the right bank no longer exists. Where it is

[1] LOFTUS, *Susiana and Chaldæa*, p. 73; LAYARD, *Discoveries in the Ruins of Nineveh and Babylon*, p. 146 (i. vol. 8vo. 1853).

[2] HERODOTUS, exaggerates this difference, but it is a real one. "The plant," he says, "is nourished and the ears formed by means of irrigation from the river. For this river does not, as in Egypt, overflow the cornlands of its own accord, but is spread over them by the hand or by the help of engines," i. 193. [Our quotations are from Prof. Rawlinson's *Herodotus* (4 vols. 8vo. 1875; Murray); ED.] The inundations of the Tigris and Euphrates do not play so important a *rôle* in the lives of the inhabitants of Mesopotamia, as that of the Nile in those of the Egyptians.

not raised and defended by dykes, the waters flow over it at more than one point. They spread through large breaches into a sort of hollow where they form wide marshes, such as those which stretch in these days from the country west of the ruins of Babylon almost to the Persian Gulf. In the parching heat of the summer months the mud blackens, cracks, and exhales miasmic vapours, so that a long acclimatization, like that of the Arabs, is necessary before one can live in the region. Some of these Arabs live in forests of reeds like those represented in the Assyrian bas-reliefs.[1]

Their huts of mud and rushes rise upon a low island in the marshes; and all communication with neighbouring tribes and with the town in which they sell the product of their rice-fields, is carried on by boats. The brakes are more impenetrable than the thickest underwood, but the natives have cut alleys through them, along which they impel their large flat-bottomed *teradas* with poles.[2] Sometimes a sudden rise of the river will raise the level of these generally stagnant waters by a yard or two, and during the night the huts and their inhabitants, men and animals together, will be sent adrift. Two or three villages have been destroyed in this fashion amid the complete indifference of the authorities. The tithe-farmer may be trusted to see that the survivors pay the taxes due from their less fortunate neighbours.

The masters of the country could, if they chose, do much to render the country more healthy, more fertile, more capable of supporting a numerous population. They might direct the course of the annual floods, and save their excess. When the land was managed by a proprietory possessing intelligence, energy, and foresight, it had, especially in minor details, a grace and picturesque beauty of its own. When every foot of land was carefully cultivated, when the two great streams were thoroughly kept in hand, their banks and those of the numerous canals intersecting the plains were overhung with palms. The eye fell with pleasure upon the tall trunks with their waving plumes, upon the bouquets of broad leaves with their centre of yellow dates; upon the cereals and other useful and ornamental plants growing under their gentle shade, and forming a carpet

[1] Layard, *A Second Series of the Monuments of Nineveh*, plate 27 (London, oblong folio, 1853).

[2] Layard, *Discoveries*, pp. 551-556; Loftus, *Chaldæa and Susiana*, chap. x.

for the rich and sumptuous vegetation above. Around the villages perched upon their mounds the orchards spread far and wide, carrying the scent of their orange trees into the surrounding country, and presenting, with their masses of sombre foliage studded with golden fruit, a picture of which the eye could never grow weary.

No long series of military disasters was required to destroy all this charm; fifty years, or, at most, a century, of bad administration was enough.[1] Set a score of Turkish pachas to work, one after the other, men such as those whom contemporary travellers have encountered at Mossoul and Baghdad; with the help of their underlings they will soon have done more harm than the marches and conflicts of armies. There is no force more surely and completely destructive than a government which is at once idle, ignorant, and corrupt.

With the exception of the narrow districts around a few towns and villages, where small groups of population have retained something of their former energy and diligence, Mesopotamia is now, during the greater part of the year, given over to sterility and desolation. As it is almost entirely covered with a deep layer of vegetable earth, the spring clothes even its most abandoned solitudes with a luxuriant growth of herbs and flowers. Horses and cattle sink to their bellies in the perfumed leafage,[2] but after the month of May the herbage withers and becomes discoloured; the dried stems split and crack under foot, and all verdure disappears except from the river-banks and marshes. Upon these wave the feathery fronds of the tamarisk, and in the stagnant or slowly moving water which fills all the depressions of the soil, aquatic plants, water-lilies, rushes, papyrus, and gigantic reeds spring up in dense masses, and make the low-lying country look like a vast prairie, whose native freshness even the sun at its zenith has no power to destroy. Everywhere else nature is as

[1] LAYARD (*Discoveries*, pp. 467, 468 and 475) tells us what the Turks "have made of two of the finest rivers in the world, one of which is navigable for 850 miles from its mouth, and the other for 600 miles."

[2] LAYARD, *Nineveh and its Remains*, vol. i. p. 78 (1849). "Flowers of every hue enamelled the meadows; not thinly scattered over the grass as in northern climes, but in such thick and gathering clusters that the whole plain seemed a patch-work of many colours. The dogs as they returned from hunting, issued from the long grass dyed red, yellow, or blue, according to the flowers through which they had last forced their way."

dreary in its monotony as the vast sandy deserts which border the country on the west. In one place the yellow soil is covered with a dried, almost calcined, stubble; in another, with a grey dust which rises in clouds before the slightest breeze; in the neighbourhood of the ancient townships it has received a reddish hue from the quantity of broken and pulverized brick with which it is mixed. These colours vary in different places, but from Mount Masius to the shores of the Persian Gulf, from the Euphrates to the Tigris, the traveller is met almost constantly by the one melancholy sight—of a country spreading out before him to the horizon, in which neglect has gone on until the region which the biblical tradition represents as the cradle of the human race has been rendered incapable of supporting human life.[1]

The physiognomy of Mesopotamia has then been profoundly modified since the fall of the ancient civilization. By the indolence of man it has lost its adornments, or rather its vesture, in the ample drapery of waving palms and standing corn that excited the admiration of Herodotus.[2] But the general characteristics and leading contours of the landscape remain what they were. Restore in thought one of those Babylonian structures whose lofty ruins now serve as observatories for the explorer or passing traveller. Suppose yourself, in the days of Nebuchadnezzar, seated upon the summit of the temple of Bel, some hundred or hundred and twenty yards above the level of the plain. At such a height the smiling and picturesque details which were formerly so plentiful and are now so rare, would not be appreciated. The domed surfaces of the woods would seem flat, the varied cultivation, the changing colours of the fields and pastures would hardly be distinguished. You would be struck then, as you are struck to-day, by the extent

[1] Layard, *Nineveh and its Remains*, vol. ii. pp. 68-75.

[2] Herodotus, i. 193. "Of all the countries that we know, there is none which is so fruitful in grain. It makes no pretension indeed, of growing the fig, the olive, the vine, or any other trees of the kind; but in grain it is so fruitful as to yield commonly two hundredfold, and when the production is greatest, even three hundredfold. The blade of the wheat plant and barley is often four fingers in breadth. As for millet and the sesame, I shall not say to what height they grow, though within my own knowledge; for I am not ignorant that what I have already written concerning the fruitfulness of Babylonia, must seem incredible to those who have never visited the country . . . . Palm trees grow in great numbers over the whole of the flat country, mostly of the kind that bears fruit, and this fruit supplies them with bread, wine, and honey."

and uniformity of the vast plain which stretches away to all the points of the compass.

In Assyria, except towards the south where the two rivers begin to draw in towards each other, the plains are varied by gentle undulations. As the traveller approaches the northern and eastern frontiers, chains of hills, and even snowy peaks, loom before him. In Chaldæa there is nothing of the kind. The only accidents of the ground are those due to human industry; the dead level stretches away as far as the eye can follow it, and, like the sea, melts into the sky at the horizon.

§ 3. *The Primitive Elements of the Population.*

THE two great factors of all life and of all vegetable production are water and warmth, so that of the two great divisions of the country we have just described, the more southern must have been the first inhabited, or at least, the first to invite and aid its inhabitants to make trial of civilization.

In the north the two great rivers are far apart. The vast spaces which separate them include many districts which have always been, and must ever be, very difficult of irrigation, and consequently of cultivation. In the south, on the other hand, below the thirty-fourth degree of latitude, the Tigris and Euphrates approach each other until a day's march will carry the traveller from one to the other; and for a distance of some eighty leagues, ending but little short of the point of junction, their beds are almost parallel. In spite of the heat, which is, of course, greater than in northern Mesopotamia, nothing is easier than to carry the blessings of irrigation over the whole of such a region. When the water in the rivers and canals is low, it can be raised by the aid of simple machines, similar in principle to those we described in speaking of Egypt.[1]

It is here, therefore, that we must look for the scene of the first attempts in Asia to pass from the anxious and uncertain life of the fisherman, the hunter, or the nomad shepherd, to that of the sedentary husbandman, rooted to the soil by the pains he has taken

[1] *History of Art in Ancient Egypt*, vol. i. p. 15 (London, 1883, Chapman and Hall). Upon the Chaldæan *chadoufs* see LAYARD, *Discoveries*, pp. 109, 110.

to improve its capabilities, and by the homestead he has reared at the border of his fields. In the tenth and eleventh chapters of Genesis we have an echo of the earliest traditions preserved by the Semitic race of their distant origin. "And it came to pass, as they journeyed from the east, that they found a plain in the land of Shinar; and they dwelt there."[1] The *land of* Shinar is the Hebrew name of what we call Chaldæa. There is no room for mistake. When the sacred writer wishes to tell us the origin of human society, he transports us into Lower Mesopotamia. It is there that he causes the posterity of Noah to build the first great city, Babel, the prototype of the Babylon of history; it is there that he tells us the confusion of tongues was accomplished, and that the common centre existed from which men spread themselves over the whole surface of the earth, to become different nations. The oldest cities known to the collector of these traditions were those of Chaldæa, of the region bordering on the Persian Gulf.

"And Cush begat Nimrod: he began to be a mighty one in the earth.

"He was a mighty hunter before the Lord: wherefore it is said, '*Even as Nimrod, the mighty hunter before the Lord.*'

"And the beginning of his kingdom was Babel, and Erech, and Accad, and Calneh, in the land of Shinar.

"Out of that land went forth Asshur, and builded Nineveh, and the city Rehoboth, and Calah,

"And Resen between Nineveh and Calah: the same is a great city."[2]

These statements have been confirmed by the architectural and other remains found in Mesopotamia. Inscriptions from which fresh secrets are wrested day by day; ruins of buildings whose dates are to be approximately divined from their plans, their structure, and their decorations; statues, statuettes, bas-reliefs, and all the various *débris* of a great civilization, when studied with the industrious ardour which distinguishes modern science, enable the critic to realise the vast antiquity of those Chaldæan cities, in which legend and history are so curiously mingled.

Even before they could decipher their meaning Assyriologists had compared, from the palæographic point of view, the different varieties of the written character known as *cuneiform*—a character which lent itself for some two thousand years, to the notation of

[1] *Genesis* x. 2. [2] *Genesis* x. 8-12.

the five or six successive languages, at least, in which the inhabitants of Western Asia expressed their thoughts. These wedge-shaped characters are found in their most primitive and undeveloped forms in the mounds dotted over the southern districts of Mesopotamia, in company with the earliest signs of those types which are especially characteristic of the architecture, ornamentation, and plastic figuration of Assyria.

There is another particular in which the monumental records and the biblical tradition are in accord. During those obscure centuries that saw the work sketched out from which the civilization of the Tigris and Euphrates basin was, in time, to be developed, the Chaldæan population was not homogeneous; the country was inhabited by tribes who had neither a common origin nor a common language. This we are told in Genesis. The earliest chiefs to build cities in Shinar are there personified in the person of Nimrod, who is the son of Cush, and the grandson of Ham. He and his people must be placed, therefore, in the same family as the Ethiopians, the Egyptians, and the Libyans, the Canaanites and the Phœnicians.[1]

A little lower down in the same genealogical table we find attached to the posterity of Shem that Asshur who, as we are told in the verses quoted above, left the plains of Shinar in order to found Nineveh in the upper country.[2] So, too, it was from Ur of the Chaldees that Terah, another descendant of Shem, and, through Abraham, the ancestor of the Jewish people, came up into Canaan.[3]

The world has, unhappily, lost the work of Berosus, the Babylonish priest, who, under the Seleucidæ, did for Chaldæa what Manetho was doing almost at the same moment for Egypt.[4]

[1] *Genesis* x. 6-20.

[2] *Genesis* x. 22: "The children of Shem."

[3] *Genesis* xi. 27-32.

[4] In his paper upon the *Date des Écrits qui portent les Noms de Bérose et de Manéthou* (Hachette, 8vo. 1873), M. ERNEST HAVET has attempted to show that neither of those writers, at least as they are presented in the fragments which have come down to us, deserve the credence which is generally accorded to them. The paper is the production of a vigorous and independent intellect, and there are many observations which should be carefully weighed, but we do not believe that, as a whole, its hypercritical conclusions have any chance of being adopted. All recent progress in Egyptology and Assyriology goes to prove that the fragments in question contain much authentic and precious information, in spite of the carelessness with which they were transcribed, often at second and third hand, by abbreviators of the *basse époque*.

Berosus compiled the history of Chaldæa from the national chronicles and traditions. The loss of his work is still more to be lamented than that of Manetho. The wedges may never, perhaps, be read with as much certainty as the hieroglyphs ; the remains of Chaldæo-Assyrian antiquity are much less copious and well preserved than those of the Egyptian civilization, while the gap in the existing documents are more frequent and of a different character. And yet much precious information, especially in these latter days, has been drawn from those fragments of his work which have come down to us. In one of these we find the following evidence as to the mixture of races : "At first there were at Babylon a great number of men belonging to the different nationalities that colonized Chaldæa." [1]

How far did that diversity go ? The terms used by Berosus are vague enough, while the Hebraic tradition seems to have preserved the memory of only two races who lived one after the other in Chaldæa, namely, the Kushites and the Shemites. And may not these groups, though distinct, have been more closely connected than the Jews were willing to admit ? We know how bitterly the Jews hated those Canaanitish races against whom they waged their long and destructive wars ; and it is possible that, in order to mark the separation between themselves and their abhorred enemies, they may have shut their eyes to the exaggeration of the distance between the two peoples. More than one historian is inclined to believe that the Kushites and Shemites were less distantly related than the Hebrew writers pretend. Almost every day criticism discovers new points of resemblance between the Jews before the captivity and certain of their neighbours, such as the Phœnicians. Almost the same language was spoken by each ; each had the same arts and the same symbols, while many rites and customs were common to both. Baal and Moloch were adored in Judah and Israel as well as in Tyre and Sidon. This is not the proper place to discuss such a question, but, whatever view we may take of it, it seems that the researches of Assyriologists have led to the following conclusion : That primitive Chaldæa received and retained various ethnic elements upon its fertile soil ; that those elements in time became fused together, and that, even in the

[1] See § 2 of Fragment i. of Berosus, in the *Fragmenta Historicorum Græcorum* of Ch. Müller (*Bibliothèque Grecque-Latine* of Didot), vol. ii. p. 496 ; Ἐν δὲ τῇ Βαβυλῶνι πολὺ πλῆθος ἀνθρώπων γενέσθαι ἀλλοεθνῶν κατοικησάντων τὴν Χαλδαίαν.

beginning, the diversities that distinguished them one from another were less marked than a literal acceptance of the tenth chapter of Genesis might lead us to believe.

We cannot here undertake to explain all the conjectures to which this point has given rise. We are without some, at least, of the qualifications necessary for the due appreciation of the proofs, or rather of the probabilities, which are relied on by the exponents of this or that hypothesis. We must refer curious readers to the works of contemporary Assyriologists ; or they may, if they will, find all the chief facts brought together in the writings of MM. Maspero and François Lenormant, whom we shall often have occasion to quote.[1] We shall be content with giving, in as few words as possible, the theory which appears at present to be generally admitted.

There is no doubt as to the presence in Chaldæa of the Kushite tribes. It is the Kushites, as represented by Nimrod, who are mentioned in Genesis before any of the others ; a piece of evidence which is indirectly confirmed by the nomenclature of the Greek writers. They often employed the terms Κισσαῖοι and Κίσσιοι to denote the peoples who belonged to this very part of Asia,[2] terms under which it is easy to recognize imperfect transliterations of a name that began its last syllable in the Semitic tongues with the sound we render by *sh*. As the Greeks had no letters corresponding to our *h* and *j*, they had to do the best they could with breathings. Their descendants had to make the same shifts when they became subject to the Turks, and had to express every word of their conqueror's language without possessing any signs for those sounds of *sh* and *j* in which it abounded.

The same vocable is preserved to our day in the name borne by one of the provinces of Persia, Khouzistan. The objection that the Κισσαῖοι or Κισσίοι of the classic writers and poets were placed in Susiana rather than in Chaldæa will no longer be made. Susiana borders upon Chaldæa and belongs, like it, to the basin of the Tigris. There is no natural frontier between the two countries, which were closely connected both in peace and war. On the

[1] Gaston MASPERO, *Histoire ancienne des Peuples de l'Orient*, liv. ii. ch. iv. *La Chaldée*. François LENORMANT, *Manuel d'Histoire ancienne de l'Orient*, liv. iv. ch. i. (3rd edition).

[2] The principal texts in which these terms are to be met with are brought together in the *Wörterbuch der Griechischen Eigennamen* of PAPE (3rd edition), under the words Κισσία, Κίσσιοι, Κοσσαῖοι.

other hand, the name of Ethiopians, often applied by the same authors to the dwellers upon the Persian Gulf and the Sea of Oman, recalls the relationship which attached the Kushites of Asia to those of Africa in the Hebrew genealogies.

We have still stronger reasons of the same kind for affirming that the Shemites or Semites occupied an important place in Chaldæa from the very beginning. Linguistic knowledge here comes to the aid of the biblical narrative and confirms its ethnographical data. The language in which most of our cuneiform inscriptions are written, the language, that is, that we call Assyrian, is closely allied to the Hebrew. Towards the period of the second Chaldee Empire, another dialect of the same family, the Aramaic, seems to have been in common use from one end of Mesopotamia to the other. A comparative study of the rites and religious beliefs of the Semitic races would lead us to the same result. Finally, there is something very significant in the facility with which classic writers confuse such terms as Chaldæans, Assyrians, and Syrians; it would seem that they recognized but one people between the Isthmus of Suez on the south and the Taurus on the north, between the sea-board of Phœnicia on the west and the table lands of Iran in the east. In our day the dominant language over the whole of the vast extent of territory which is inclosed by those boundaries is Arabic, as it was Syriac during the early centuries of our era, and Aramaic under the Persians and the successors of Alexander. From the commencement of historic times the Semitic element has never ceased to play the chief *rôle* from one end of that region to the other. For Syria proper, its pre-eminence is attested by a number of facts which leave no room for doubt. Travellers and historians classed the inhabitants of Mesopotamia with those of Phœnicia and Palestine, because, to their unaccustomed ears, the differences between their languages were hardly perceptible, while their personal characteristics were practically identical. Such affinities and resemblances are only to be explained by a common origin, though the point of junction may have been distant.

It has also been asserted that an Aryan element helped to compose the population of primitive Chaldæa, that sister tribes to those of India and Persia, Armenia and Asia Minor furnished their contingents to the mixed population of Shinar. Some have even declared that a time came when those tribes obtained the chief power. It may have been so, but the evidence upon which the

hypothesis rests is very slight. Granting that the Aryans did settle in Chaldæa, they were certainly far less numerous than the other colonists, and were so rapidly absorbed into the ranks of the majority that neither history nor language has preserved any sensible trace of their existence. We may therefore leave them out of the argument until fresh evidence is forthcoming.

But the students of the inscriptions had another, and, if we accept the theories of MM. Oppert and François Lenormant, a better-founded, surprise in store for us. It seemed improbable that science would ever succeed in mounting beyond those remote tribes, the immediate descendants of Kush and Shem, who occupied Chaldæa at the dawn of history; they formed, to all appearance, the most distant background, the deepest stratum, to which the historian could hope to penetrate; and yet, when the most ancient epigraphic texts began to yield up their secrets, the interpreters were confronted, as they assure us, with this startling fact: the earliest language spoken, or, at least, written, in that country, belonged neither to the Aryan nor to the Semitic family, nor even to those African languages among which the ancient idiom of Egypt has sometimes been placed; it was, in an extreme degree, what we now call an *agglutinative language*. By its grammatical system and by some elements of its vocabulary it suggests a comparison with Finnish, Turkish, and kindred tongues.

Other indications, such as the social and religious conditions revealed by the texts, have combined with these characteristics to convince our Assyriologists that the first dwellers in Chaldæa—the first, that is, who made any attempt at civilization—were Turanians, were part of that great family of peoples who still inhabit the north of Europe and Asia, from the marshes of the Baltic to the banks of the Amoor and the shores of the Pacific Ocean.[1] The

[1] A single voice, that of M. Halévy, is now raised to combat this opinion. He denies that there is need to search for any language but a Semitic one in the oldest of the Chaldæan inscriptions. According to him, the writing under which a Turanian idiom is said to lurk, is no more than a variation upon the Assyrian fashion of noting words, than an early form of writing which owed its preservation to the quasi-sacred character imparted by its extreme antiquity. We have no intention of discussing his thesis in these pages; we must refer those who are interested in the problem to M. HALÉVY'S dissertation in the *Journal Asiatique* for June 1874: *Observasions critiques sur les prétendus Touraniens de la Babylonie.* M. Stanislas Guyard shares the ideas of M. Halévy, to whom his accurate knowledge and fine critical powers afford no little support.

languages of all those peoples, though various enough, had certain features in common. No one of them reached the delicate and complex mechanism of internal and terminal inflexion; they were guiltless of the subtle processes by which Aryans and Semites expressed the finest shades of thought, and, by declining the substantive and conjugating the verb, subordinated the secondary to the principal idea; they did not understand how to unite, in an intimate and organic fashion, the root to its qualifications and determinatives, to the adjectives and phrases which give colour to a word, and indicate the precise *rôle* it has to play in the sentence in which it is used. These languages resemble each other chiefly in their lacunæ. Compare them in the dictionaries and they seem very different, especially if we take two, such as Finnish and Chinese, that are separated by the whole width of a continent.

It is the same with their physical types. Certain tribes whom we place in the Turanian group have all the distinctive characteristics of the white races. Others are hardly to be distinguished from the yellow nations. Between these two extremes there are numerous varieties which carry us, without any abrupt transition, from the most perfect European to the most complete Chinese type.[1] In the Aryan family the ties of blood are perceptible even between the most divergent branches. By a comparative study of their languages, traditions, and religious conceptions, it has been proved that the Hindoos upon the Ganges, the Germans on the Rhine, and the Celts upon the Loire, are all offshoots of a single stem. Among the Turanians the connections between one race and another are only perceptible in the case of tribes living in close neighbourhood to one another, who have had mutual relations over a long course of years. In such a case the natural affinities are easily seen, and a family of peoples can be established with certainty. The classification is less definitely marked and clearly

[1] Maspero, *Histoire ancienne*, p. 134. Upon the etymology of *Turanians* see Max Müller's *Science of Language*, 2nd edition, p. 300, *et seq.* Upon the constituent characteristics of the Turanian group of races and languages other pages of the same work may be consulted. . . . The distinction between Turan and Iran is to be found in the literature of ancient Persia, but its importance became greater in the Middle Ages, as may be seen by reference to the great epic of Firdusi, the *Shah-Nameh*. The kings of Iran and Turan are there represented as implacable enemies. It was from the Persian tradition that Professor Müller borrowed the term which is now generally used to denote those northern races of Asia that are neither Aryans nor Semites.

divided than that of the Aryan and Semitic families; but, nevertheless, it has a real value for the historian.[1]

According to the doctrine which now seems most widely accepted, it was from the crowded ranks of the immense army which peopled the north that the tribes who first attempted a civilized life in the plains of Shinar and the fertile slopes between the mountains and the left bank of the Tigris, were thrown off. It is thought that these tribes already possessed a national constitution, a religion, and a system of legislation, the art of writing and the most essential industries, when they first took possession of the lands in question.[2] A tradition still current among the eastern Turks puts the cradle of the race in the valleys of the Altaï, north of the plateau of Pamir.[3] Whether the emigrants into Chaldæa brought the rudiments of their civilization with them, or whether their inventive faculties were only stirred to action after their settlement in that fertile land, is of slight importance. In any case we may say that they were the first to put the soil into cultivation, and to found industrious and stationary communities along the banks of its two great rivers. Once settled in Chaldæa, they called themselves, according to M. Oppert, the people of SUMER, a title which is continually associated with that of "the people of ACCAD" in the inscriptions.[4]

§ 4. *The Wedges.*

THE writing of Chaldæa, like that of Egypt, was, in the beginning, no more than the abridged and conventionalized representation of familiar objects. The principle was identical with that of

[1] This family is sometimes called *Ural-Altaïc*, a term formed in similar fashion to that of *Indo-Germanic*, which has now been deposed by the term Aryan. It is made up of the names of two mountain chains which seem to mark out the space over which its tribes were spread. Like the word *Indo-Germanic*, it made pretentions to exactitude which were only partially justified.

[2] This is the opinion of M. OPPERT. He was led to the conclusion that their writing was invented in a more northern climate than that of Chaldæa, by a close study of its characters. There is one sign representing a bear, an animal which does not exist in Chaldæa, while the lions which were to be found there in such numbers had to be denoted by paraphrase, they were called *great dogs*. The palm tree had no sign of its own. See in the *Journal Asiatique* for 1875, p. 466, a note to an answer to M. Halévy entitled *Summérien ou rien*.

[3] MASPERO, *Histoire ancienne*, p. 135.

[4] These much disputed terms, Sumer and Accad, are, according to MM. Halévy and Guyard, nothing but the geographical titles of two districts of Lower Chaldæa.

the Egyptian hieroglyphs and of the oldest Chinese characters. There are no texts extant in which images are exclusively used,[1] but we can point to a few where the ideograms have preserved their primitive forms sufficiently to enable us to recognize their origin with certainty. Among those Assyrian syllabaries which have been so helpful in the decipherment of the wedges, there is one tablet where the primitive form of each symbol is placed opposite the group of strokes which had the same value in after ages.[2]

This tablet is, however, quite exceptional, and, as a rule, the cuneiform characters cannot thus be traced to their primitive form. But well-ascertained and independent facts allow us to come to certain conclusions which even this scanty evidence is enough to confirm.

In inventing the process of writing and bringing it to perfection, the human intellect worked on the same lines among the Turanians of Chaldæa as it did everywhere else. The point of departure and the early stages have been the same for all peoples, although some have stopped half-way and others when three-fourths of the journey were complete. The supreme discovery which should crown the effort is the attribution of a special sign to each of the elementary articulations of the human voice. This final object, an object towards which the most gifted nations of antiquity were working for so many centuries, was just missed by the Egyptians. They were, we may say, wrecked in port, and the glory of creating

[1] We are told that there is an inscription at Susa of this character. It has been examined but not as yet reproduced. We can, therefore, make no use of it. See François Lenormant, *Manuel d'Histoire ancienne*, vol. ii. p. 156.

[2] M. Lenormant reproduces this tablet in his *Histoire ancienne de l'Orient* (9th edition, vol. i. p. 420). The whole of the last chapter in this volume should be carefully studied. It is well illustrated, and written with admirable clearness. The same theories and discoveries are explained at greater length in the introduction to M. Lenormant's great work entitled *Essai sur la Propagation de l'Alphabet phenicien*, of which but one volume has as yet appeared (Maisonneuve, 8vo., 1872). At the very commencement of his investigations M. Oppert had called attention to the curious forms presented by certain characters in the oldest inscriptions. See *Expédition scientifique de Mésopotamie*, vol. ii. pp. 62, 3, notably the paragraph entitled *Origine Hiéroglyphique de l'Écriture anarienne.* The texts upon which the remarks of MM. Oppert and Lenormant were mainly founded were published under the title of *Early Inscriptions from Chaldæa* in the invaluable work of Sir Henry Rawlinson (*A Selection from the Historical Inscriptions of Chaldæa, Assyria, and Babylonia*, prepared for publication by Major-General Sir Henry Rawlinson, assisted by Edwin Norris, British Museum, folio, 1861).

the alphabet that men will use as long as they think and write was reserved for the Phœnicians.

Even when their civilization was at its height the Babylonians never came so near to alphabetism as the Egyptians. This is not the place for an inquiry into the reasons of their failure, nor even for an explanation how signs with a phonetic value forced themselves in among the ideograms, and became gradually more and more important. Our interest in the two kinds of writing is of a different nature; we have to learn and explain their influence upon the plastic arts in the countries where they were used.

In our attempt to define the style of Egyptian sculpture and to give reasons for its peculiar characteristics, we felt obliged to attribute great importance to the habits of eye and hand suggested and confirmed by the cutting and painting of the hieroglyphs. In their monumental inscriptions, if nowhere else, the symbols of the Egyptian system retained their concrete imagery to the end; and the images, though abridged and simplified, never lost their resemblance;[1] and if it is necessary to know something more than the particular animal or thing which they represent before we can get at their meaning, that is only because in most cases they had a metaphorical or even a purely phonetic signification as well as their ideographic one. For the most part, however, it is easy to recognize their origin, and in this they differ greatly from the symbols of the first Chaldæan alphabet. In the very oldest documents there are certain ideograms that, when we are warned, remind us of the natural objects from which their forms have been taken, but the connection is slight and difficult of apprehension. Even in the case of those characters whose forms most clearly suggest their true figurative origin, it would have been impossible to assign its prototype to each without the help of later texts, where, with more or less modification, they formed parts of sentences whose general significance was known. Finally, the Assyrian syllabaries have preserved the meaning of signs, that, so far as we can judge, would otherwise have been stumbling-blocks even to the wise men of Nineveh when they were confronted with such ancient inscriptions as those whose fragments are still found among the ruins of Lower Chaldæa.

Even in the remote days that saw the most venerable of these inscriptions cut, the images upon which their forms were based

[1] See the *History of Art in Ancient Egypt*, vol. ii. pp. 350-3 (?).

had been rendered almost unrecognizable by a curious habit, or caprice, which is unique in history. Writing had not yet become entirely *cuneiform*, it had not yet adopted those triangular strokes which are called sometimes nails, sometimes arrow-heads, and sometimes wedges, as the exclusive constituents of its character. If we examine the tablets recovered by Mr. Loftus from the ruins of Warka, the ancient Erech (Fig. 1), or the inscriptions upon the diorite statues found at Tello by M. de Sarzec (Fig. 2), we shall find that in the distant period from which those writings date, most of the characters had what we may call an unbroken trace.[1] This trace, like that of the hieroglyphs, would have been well fitted for the succinct imitation of natural objects but for a rigid

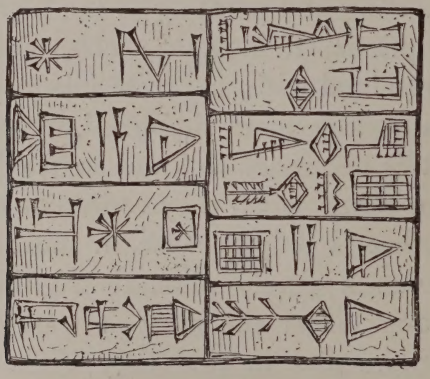


Fig. 1.—Brick from Erech.

exclusion of those curves of which nature is so fond. This exclusion is complete, all the lines are straight, and cut one another at various angles. The horror of a curve is pushed so far that even the sun, which is represented by a circle in Egyptian and other ideographic systems, is here a lozenge.

It is very unlikely that even the oldest of these texts show us Chaldæan writing in its earliest stage. Analogy would lead us to think that these figures must at one time have been more directly imitative. However that may have been, the image must have been very imperfect from the day that the rectilinear trace came into general use. Figures must then have rapidly degenerated into conventional signs. Those who used them could no longer

[1] This peculiarity is still more conspicuous in the engraved limestone pavement which was discovered in the same place, but the fragments are so mutilated as to be unfit for reproduction here.

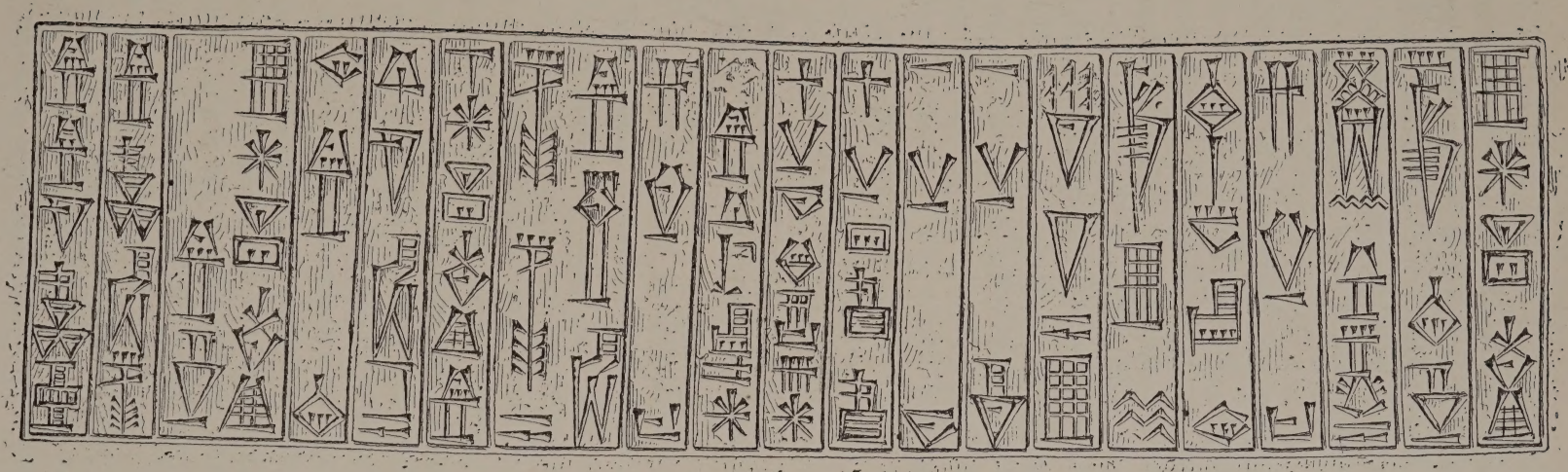


FIG. 2.—Fragment of an inscription engraved upon the back of a statue from Tello. Louvre. (Length 10¼ inches.)

pretend to actually represent the objects they wished to denote. They must have been content to suggest their ideas by means of a character whose value had been determined by usage. This transformation would be accelerated by certain habits which forced themselves upon the people as soon as they were finally established in the land of Shinar.

We are told that there are certain expressions in the Assyrian language which lead to the belief that the earliest writing was on the bark of trees, that it offered the first surface to the scribe in those distant northern regions from which the early inhabitants of Chaldæa were emigrants. It is certain that the dwellers in that vast alluvial plain were compelled by the very nature of the soil to use clay for many purposes to which no other civilization has put it. In Mesopotamia, as in the valley of the Nile, the inhabitants had but to stoop to pick up an excellent modelling clay, fine in texture and close grained—a clay which had been detached from the mountain sides by the two great rivers, and deposited in inexhaustible quantities over the whole width of the double valley. We shall see hereafter what an important part bricks, crude, fired, and enamelled, played in the construction and decoration of Chaldæan buildings. It was the same material that received most of their writing.

Clay offered a combination of facility with durability which no other material could equal. While soft and wet it readily took the shape of any figure impressed upon it. The deftly-handled tool could engrave characters upon its yielding surface almost as fast as the reed could trace them upon papyrus, and much more rapidly than the chisel could cut them in wood. Again, in its final condition as solid terra cotta, it offered a chance of duration far beyond that of either wood or papyrus. Once safely through the kiln it had nothing to fear short of deliberate destruction. The message intrusted to a terra cotta slab or cylinder could only be finally lost by the reduction of the latter to powder. At *Hillah*, the town which now occupies a corner of the vast space once covered by the streets of Babylon, bricks are found built into the walls to this day, upon which the Assyrian scholar may read as he runs the royal style and titles of Nebuchadnezzar.[1]

As civilization progressed, the dwellers upon the Persian Gulf felt an ever-increasing attraction towards the art of writing. It

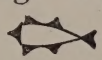
[1] LAYARD, *Discoveries in the Ruins of Nineveh and Babylon*, p. 506.

afforded a medium of communication with distant points, and a bond of connection between one generation and another; by its means the son could profit by the accumulated experience of the father. The slab of terra cotta was the most obvious material for its reception. It cost almost nothing, while such an elaborate substance as the papyrus of Egypt can never have been very cheap. It lent itself kindly to the service demanded of it, and the writer who had confided his thoughts to its surface had only to fire it for an hour or two to secure them a kind of eternity. This latter precaution did not require any very lengthy journey; brick kilns must have blazed day and night from one end of Chaldæa to another.

If we consider for a moment the properties of the material, and examine the remains which have come down to us, we shall understand at once what writing was certain to become under the triple impulse of a desire to write much, to write fast, and to use clay as we moderns use paper. Suppose oneself compelled to trace upon clay figures whose lines necessitated continual changes of direction; at each angle or curve it would be necessary to turn the hand, and with it the tool, because the clay surface, however tender it might be, would still afford a certain amount of resistance. Such resistance would hardly be an obstacle, but it would in some degree diminish the speed with which the tool could be driven. Now, as soon as writing comes into common use, most of those who employ it in the ordinary matters of life have no time to waste. It is important that all hindrances to rapid work should be avoided. The designs of the old writing with their strokes sometimes broken, sometimes continuous, sometimes thick, and sometimes thin, wearied the writer and took much time, and at last it came about that the clay was attacked in a number of short, clear-cut triangular strokes each similar in form to its fellow. As these little depressions had all the same depth and the same shape, and as the hand had neither to change its pressure nor to shift its position, it arrived with practice at an extreme rapidity of execution.

Some have asserted that the instrument with which these marks were made has been found among the Mesopotamian ruins. It is, we are told, a small style in bone or ivory with a bevelled triangular point.[1] And yet when we look with attention at these

[1] Oppert, *Expéditions scientifiques de Mésopotamie*, vol. ii. pp. 62, 3.

terra-cotta inscriptions, we fall to doubting whether the hollow marks of which they are composed could have been made by such a point. There is no sign of those scratches which we should expect to find left by a sharp instrument in its process of cutting out and removing part of the clay. The general appearance of the surface leads us rather to think that the strokes were made by thrusting some instrument with a sharp ridge like the corner of a flat rule, into the clay, and that nothing was taken away as in the case of wood or marble, but an impression made by driving back the earth into itself.[1] However this may be, the first element of the cuneiform writing was a hollow incision made by a single movement of the hand, and of a form which may be compared to a greatly elongated triangle. These triangles were sometimes horizontal, sometimes vertical, sometimes oblique, and when arranged in more or less complex groups, could easily furnish all the necessary symbols. In early ages, the elements of some of these ideographic or phonetic signs—signs which afterwards became mere complex groups of wedges—were so arranged as to suggest the primitive forms—that is, the more or less roughly blocked out images—from which they had originally sprung. The *fish* may easily be recognized in the following group  : while the character that stands for the *sun*, , reminds us of the lozenge which was the primitive sign for that luminary. In the two symbols and , we may with a little good will, recognize a *shovel* with its handle, and an *ear*. But even in the oldest texts the instances in which the primitive types are still recognizable are very few; the wedge has in nearly every case completely transfigured, and, so to speak, decomposed, their original features.

This is the case even in what is called the Sumerian system itself, and when its signs and processes were borrowed by other nations, the tendency to abandon figuration was of course still more marked. It has now been clearly proved that the wedges have served the turn of at least four languages beside that of the people who devised them, and that in passing from one people to another

[1] LAYARD, *Nineveh and its Remains*, vol. ii. p. 180.

their groups never lost the phonetic value assigned to them by their first inventors.[1]

In the absence of this extended employment all attempts to decipher the wedges would have been condemned to almost certain failure from the first, but as soon as its existence had been placed beyond doubt, there was every reason to count upon success. It allowed the words of a text to be transliterated into phonetic characters, and that being done, to discover their meaning was but an affair of time, patience, and method.

We see then, that the system of signs invented by the first inhabitants of Chaldæa had a vogue similar to that which attended the alphabet of the Phœnicians in the Mediterranean basin. For all the peoples of Western Asia it was a powerful agent of progress and civilization. We can understand, therefore, how it was that the wedge, the essential element of all those groups which make up cuneiform writing, became for the Assyrian one of the holy symbols of the divine intelligence. Upon the stone called the *Caillou Michaud*, from the name of its discoverer, it is shown standing upon an altar and receiving the prayers and homage of a priest.[2] It deserved all the respect it received; thanks to it the Babylonian genius was able to rough out and hand down to posterity the science from which Greece was to profit so largely.

And yet, in spite of all the services it had rendered, this form of writing fell into disuse towards the commencement of our era; it was supplanted even in the country of its origin by alphabets derived from that of the Phœnicians.[3] It had one grave defect: its

[1] A list of these languages, and a condensed but lucid explanation of the researches which have led to the more or less complete decipherment of the different groups of texts will be found in the *Manuel de l'Histoire ancienne de l'Orient* of LENORMANT, 3rd edition, vol. ii. pp. 153, &c.—"Several languages—we know of five up to the present moment—have given the same phonetic value to these symbols. It is clear, however, that a single nation must have invented the system," OPPERT, *Journal Asiatique*, 1875, p. 474. M. Oppert has given an interesting account of the mode of decipherment in the *Introduction* and in *Chapter I.* of the first volume of his *Expédition scientifique de Mésopotamie.*

[2] A reproduction of this stone will be found farther on. The detail in question is engraved in LAYARD'S *Nineveh and its Remains*, vol. ii. p. 181.

[3] The latest cuneiform inscription we possess dates from the time of Domitian. It has been published by M. OPPERT, *Mélanges d'Archéologie égyptienne et assyrienne*, vol. i. p. 23 (Vieweg, 1873, 4to.). Some very long ones, from the time of the Seleucidæ and the early Arsacidæ, have been discovered.

phonetic signs always represented syllables. No one of the wedge-using communities made that decisive step in advance of which the honour belongs to the Phœnicians alone. No one of them carried the analysis of language so far as to reduce the syllable to its elements, and to distinguish the consonant, mute by itself, from the vowel upon which it depends, if we may say so, for an active life.

All those races who have not borrowed their alphabet *en bloc* from their neighbours or predecessors but have invented it for themselves, began with the imitation of objects. At first we have a mere outline, made to gratify some special want.[1] The more these figures were repeated, the more they tended towards a single stereotyped form, and that an epitomized and conventional one. They were only signs, so that it was not in the least necessary to painfully reproduce every feature of the original model, as if the latter were copied for its plastic beauty. As time passed on, writing and drawing won separate existences; but at first they were not to be distinguished one from the other, the latter was but a use of the former, and, in a sense, we may even say that writing was the first and simplest of the plastic arts.

In Egypt this art remained more faithful to its origin than elsewhere. Even when it had attained the highest development it ever reached in that country, and was on the point of crowning its achievements by the invention of a true alphabet, it continued to reproduce the general shapes and contours of objects. The hieroglyphs were truly a system of writing by which all the sounds of the language could be noted and almost reduced to their final elements; but they were also, up to their last day, a system of design in which the characteristic features of genera and species, if not of individuals, were carefully distinguished.

Was it the same in Chaldæa? Had the methods, and what we may call the style of the national writing, any appreciable influence upon the plastic arts, upon the fashion in which living nature was understood and reproduced? We do not think it had, and the reason of the difference is not far to seek. The very oldest of the ideographic signs of Chaldæa are much farther removed from the objects upon which they were based than the Egyptian hieroglyphs;

[1] Hence the name *pictography* which some scholars apply to this primitive form of writing. The term is clear enough, but unluckily it is ill composed: it is a hybrid of Greek and Latin, which is sufficient to prevent its acceptance by us.

and when the wedge became the primary element of all the characters, the scribe ceased to give even the most distant hint of the real forms of the things signified. Throughout the period which saw those powerful empires flourishing in Mesopotamia whose creations were admired and copied by all the peoples of Western Asia, the more or less complex groups and arrangements of the cuneiform writing, to whatever language applied, had no aim but to represent sometimes whole words, sometimes the syllables of which those words were composed. Under such conditions it seems unlikely that the forms of the written characters can have contributed much to form the style of artists who dealt with the figures of men and animals. We may say that the sculptors and painters of Chaldæa were not, like those of Egypt, the scholars of the scribes.

And yet there is a certain analogy between the handling of the inscriptions and that of the bas-reliefs. It is doubtless in the nature of the materials employed that we must look for the final explanation of this similarity, but it is none the less true that writing was a much earlier and a much more general art than sculpture. The Chaldæan artist must have carried out his modelling with a play of hand and tool learnt in cutting texts upon clay, and still more, upon stone. The same chisel-stroke is found in both ; very sure, very deep, and a little harsh.

However this may be, we cannot embark upon the history of Art in Chaldæa without saying a word upon her graphic system. If there be one proof more important than another of the great part played by the Chaldæans in the ancient world, it is the success of their writing, and its diffusion as far as the shores of the Euxine and the eastern islands of the Mediterranean. Some cuneiform texts have lately been discovered in Cappadocia, the language of which is that of the country,[1] and the most recent discoveries point to the conclusion that the Cypriots borrowed from Babylonia the symbols by which the words of the Greek dialect spoken in their island were noted.[2]

[1] See the *Proceedings of the Society of Biblical Archæology*, twelfth session, 1881-2.

[2] See Michel Bréal, *Le Déchiffrement des Inscriptions cypriotes* (*Journal des Savants*, August and September, 1877). In the last page of his article, M. Bréal, while fully admitting the objections, asserts that it is "difficult to avoid recognizing the general resemblance (difficile de méconnaître la ressemblance générale)." He refers us to the paper of Herr Deecke, entitled *Der Ursprung der Kyprischen Sylbenschrift, eine palæographische Untersuchung*, Strasbourg, 1877. Another

We have yet to visit more than one famous country. In our voyage across the plains where antique civilization was sketched out and started on its long journey to maturity, we shall, whenever we cross the frontiers of a new people, begin by turning our attention for a space to their inscriptions; and wherever we are met by those characters which are found in their oldest shapes in the texts from Lower Chaldæa, there we shall surely find plastic forms and motives whose primitive types are to be traced in the remains of Chaldæan art. A man's writing will often tell us where his early days were passed and under what masters his youthful intellect received the bent that only death can take away.

§ 5. *The History of Chaldæa and Assyria.*

WE cannot here attempt even to epitomize the history of those great empires that succeeded one another in Mesopotamia down to the period of the Persian conquest. Until quite lately their history was hardly more than a tissue of tales and legends behind which it was difficult to catch a glimpse of the few seriously attested facts, of the few people who were more than shadows, and of the dynasties whose sequence could be established. The foreground was taken up by fabulous creatures like Ninus and Semiramis, compounded by the lively imagination of the Greeks of features taken from several of the building and conquering sovereigns of Babylon and Nineveh. So, in the case of Egypt, was forged the image of that great Sesostris who looms so large in the pages of the Greek historians and combines many Pharaohs of the chief Theban dynasties in his own person. The romantic tales of Ctesias were united by Rollin and his emulators with other statements of perhaps still more doubtful value. The book of Daniel was freely drawn upon, and yet it is certain that it was not written until the year which saw the death of Antiochus Epiphanes. The book of Daniel is polemical, not historical; the Babylon in which its scene is laid is a Babylon of the

hypothesis has been lately started, and an attempt made to affiliate the Cypriot syllabary to the as yet little understood hieroglyphic system of the Hittites. See a paper by Professor A. H. SAYCE, *A Forgotten Empire in Asia Minor*, in No. 608 of *Fraser's Magazine*.

imagination; the writer chose it as the best framework for his lessons to the Israelites, and for the menaces he wished to pour out upon their enemies.[1] Better materials are to be found in other parts of the Bible, in *Kings*, in the *Chronicles*, and in the older prophets. But it would be an ungrateful task for the critic to attempt to work out an harmonious result from evidence so various both in origin and value. The most skilful would fail in the endeavour. With such materials it would be impossible to arrive at any coherent result that would be, we do not say true, but probable.

The discovery of Nineveh, the exploration of the ruins in Chaldæa, and the decipherment of the cuneiform inscriptions, have changed all this, although much of the detail has yet to be filled in, especially so far as the earlier periods are concerned. We are now able to trace the leading lines, to mark the principal divisions, in a word, to put together the skeleton of a future history. We are no longer ignorant of the origin of Babylonish civilization nor of the directions in which it spread; we can grasp both the strong differences and the close bonds of connection between Assyria and Chaldæa, and understand the swing of the pendulum that in the course of two thousand years shifted the political centre of the country backwards and forwards from Babylon to Nineveh, while from the mountains of Armenia to the Persian Gulf, beliefs, manners, arts, spoken dialects, and written characters, preserved so many striking resemblances as to put their common origin beyond a doubt.

Not a year passes but the discovery of fresh documents and the process of translation allows us to retouch and complete the story. MM. Maspero and Lenormant have placed it before us as shaped by their most recent studies, and we shall take them for our guide in a rapid indication of the ruling character and approximate duration of each of those periods into which the twenty centuries of development may be divided. We shall then have some fixed points by which to guide our steps in the vast region whose monuments we are about to explore. So that if we say that a certain fragment belongs to the *first* or *second Chaldæan Empire*, our readers will know, not perhaps its exact date, but at least its relative age, and all risk of confusing the

[1] Th. Noeldeke, *Histoire littéraire de l'ancien Testament*, French version. See chapter vii.

time of Ourkam or Hammourabi with that of Nebuchadnezzar will be avoided.

When we attempt to mount the stream of history and to pierce the mists which become ever thicker as we near its source, what is it that we see? We see the lower part of the basin through which the twin rivers make their way, entirely occupied by tribes of various origin and blood whose ethnic characteristics we have endeavoured to point out. These mixed populations are divided by the Tigris into two distinct groups. These groups often came into violent collision, and in spite of mutual relations kept up through a long series of years, the line of demarcation between them ever remained distinct.

Towards the east, in the plain which borders the river, and upon the terraces which rise one above the other up to the plateau of Iran, we have the country called by the Greeks Susiana, and by the Hebrews the kingdom of Elam. West of the Tigris, in Mesopotamia, the first Chaldæan Empire is slowly taking shape.

The eastern state, that of which Susa was the capital, was, at intermittent periods, a great military power, and more than once poured its hosts, not only over Babylonia, but over the Syrian provinces to the west of the Euphrates. But in these momentary successes, nevertheless, the part played by this state was, on the whole, a subordinate one. It spent itself in bloody conflicts with the Mesopotamian empires, to which it became subject in the end, while at no time does it appear to have done anything to advance civilization either by isolated inventions or by general perseverance in the ways of progress. We know very little of its internal history, and nothing to speak of about its religion and government, its manners and laws; but the few monuments which have been discovered suffice to prove that its art had no independent existence, that it was never anything better than a secondary form of Chaldæan art, a branch broken off from the parent stem.

We are better, or, rather, less ill, informed, in the case of the first Chaldee Empire. The fragments of Berosus give us some knowledge of its beginnings, so far, at least, as the story was preserved in the national traditions, and the remains by which tradition can be tested and corrected are more numerous than in the case of Susiana.

The chronicles on which Berosus based his work began with a

divine dynasty, which was succeeded by a human dynasty of fabulous duration. These legendary sovereigns, like the patriarchs of the Bible, each lived for many centuries, and to them, as well as to the gods who preceded them, certain myths were attached of which we find traces in the surviving monuments. Such myths were the fish-god, Oannes, and the Chaldaic deluge with its Noah, Xisouthros.[1]

This double period, with its immoderate duration, corresponds to those dark and confused ages during which the intellect of man was absorbed in the constant and painful struggle against nature, during which he had no leisure either to take note of time or to count the generations as they passed. After this long succession of gods and heroes, Berosus gives what he calls a *Medic* dynasty, in which, it has been thought, the memory of some period of Aryan supremacy has survived. In any case, we have serious reasons for thinking that the third of the dynasties of Berosus, with its eleven kings, was of Susian origin. Without speaking of other indications which have been ingeniously grouped by modern criticism, a direct confirmation of this hypothesis is to be found in the evidence of the Bible. In the latter we find Chedorlaomer, king of Elam, master of the whole basin of the Tigris and Euphrates in the time of Abraham. Among his vassals were Amraphel, king of Shinar, and Arioch, king of Ellasar, the two principal cities of Assyria.[2] All doubts upon this point have been banished since the texts in which Assurbanipal, the last of the Ninevite conquerors, vaunts his exploits, have been deciphered. In two of these inscriptions he tells us how he took Susa 1,635 years after Chedornakhounta, king of Elam, had conquered Babylon; he found, he says, in that city sacred statues which had been carried off from Erech by the king of Elam. He brought them back again to Chaldæa and re-established them in the sanctuary from which they had been violently removed.[3]

Assurbanipal took Susa in 660. All antiquity declares that the Babylonians and the Syrians had a taste for chronology at a very

[1] This account of the fabulous origin of civilization in Chaldæa and Assyria will be found in the second book of Berosus. See *Fragmenta Historicum Græcorum* of Ch. Müller, vol. i. fr. 4, 13. Book i. is consecrated to the cosmogony, Book iii. to the Second Chaldee Empire.

[2] *Genesis* xiv.

[3] F. Lenormant, *Manuel de l'Histoire ancienne*, vol. ii. p. 24. Smith (*Assyrian Discoveries*, p. 224) puts the capture of Susa in 645, and thus arrives at the date 2280 B.C.

early period. This is proved by the eponymous system of the Assyrians, a system much to be preferred to the Egyptian habit of dating their monuments with the year of the current reign only.[1] Moreover, have not the ancients perpetuated the fame of the astronomical tables drawn up by the Chaldæans and founded upon observations dating back to a very remote epoch? Such tables could not have been made without a strict count of time. We have, then, no reason to doubt the figure named by Assurbanipal, and his chronicle may be taken to give the oldest date in the history of Chaldæa, B.C. 2,295, as the year of the Susian conquest.

The Elamite dynasty was succeeded, according to Berosus, by a native Chaldæan dynasty. Berosus—and his dates are held in great respect—places the appearance of this new royal family in 2,047, giving it forty-nine sovereigns and 458 years of duration. We are thus brought down to the conquest of Mesopotamia by the Egyptian Pharaohs of the eighteenth dynasty. The names of the Chaldæan princes have been transcribed by those Byzantine chroniclers to whom we owe the few and short fragments of Berosus that are still extant.

On the other hand, inscriptions dug up upon the sites of the Chaldæan cities have furnished us with fifty royal names which may, it is thought, be ascribed to the period whose chief divisions we have just laid down. Assyriologists have classed them as well as they could—from the more or less archaic characters of their language and writing, from the elements of which the proper names are composed, and from the relationships which some of the texts show to have existed between one prince and another—but they are still far from establishing a continuous series such as those that have been arranged for the Pharaohs even of the Ancient Empire. Interruptions are frequent, and their extent is beyond our power even to guess. Primitive Chaldæa has unluckily left behind it no document like the list of Manetho to help us in the arrangement of the royal names with which the monuments are studded.

We do not even know how the earliest royal name upon the inscriptions should be read; it is more to avoid speaking of him by a paraphrase than for any other reason that the name Ourkam has been assigned to the prince whose traces are to be found

[1] LENORMANT, *Manuel de l'Histoire ancienne*, vol. ii. p. 65, gives an account of the system under which special magistrates gave their name to each year, and of the lists which have been preserved.

sprinkled over the ruins of most of the southern cities. The characters of the texts stamped upon bricks recovered from buildings erected by him, have, as all Assyriologists know, a peculiar physiognomy of their own. Ourkam is the Menes of Chaldæa, and his date is put long before that Susian conquest of which we have spoken above. The seals of Ourkam (see Fig. 3) and of his son Ilgi[1] have been found. The name of the latter occurs almost as often as that of his father among the ruins of Southern Chaldæa.

The oldest cities of Lower Chaldæa date from this remote epoch, namely, Ur, now *Mugheir* or the *bituminous*, Uroukh now *Warka*, Larsam (*Senkerch*), Nipour (*Niffer*), Sippara, Borsip, Babylon, &c.

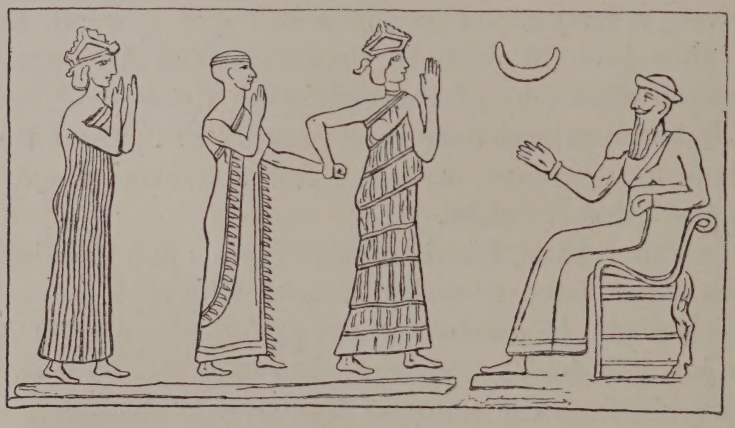


Fig. 3.—Seal of Ourkam.

Ur, on the right bank of the Euphrates and near its ancient mouth, seems to have been the first capital of the country and its chief commercial centre in those early times. The premiership of Babylon as a holy city and seat of royalty cannot have been established until much later. The whole country between Hillah and Bassorah is now little removed from a desert. Here and there rise a few tents or reed huts belonging to the Montefik Arabs, a tribe of savage nomads and the terror of travellers. Europeans have succeeded in exploring that inhospitable country only under exceptional circumstances.[2] And yet it was there, between two or three

[1] This was lately found at Bagdad after long being supposed to be lost. It is now in the British Museum.

[2] It was visited under the best conditions, and has been best described by W. Kenneth Loftus who was in it from 1849 to 1852. Attached as geologist to the English mission, commanded by Colonel, afterwards General Sir Fenwick Williams

thousand years before our era, that the intermingling of ideas and races took place which gave birth to the civilization of Chaldæa.

In order to find a king to whom we can give a probable date we have to come down as far as Ismi-Dagan, who should figure in the fourth dynasty of Berosus. Tiglath-Pileser the First, who reigned in Assyria at the end of the twelfth century, has left us an official document in which he recounts how he had restored in Ellasar (now *Kaleh-Shergat*), a temple of Oannes founded by Ismi-Dagan seven hundred years before. We are led therefore to place the latter king about 1800.[1] We learn at the same time that Assyria was inhabited, in the days of Ismi-Dagan, by a people who borrowed their gods from Chaldæa, and were dependents of the sovereign of the latter country. It was in fact upon the shores of the Persian Gulf, far enough from Assyria, that Oannes made his first revelation, and it is at Ur in the same region that the names of Ismi-Dagan and of his sons Goun-goun and Samsibin are to be found stamped upon the bricks. We may, therefore, look upon their epoch as that in which the first Chaldee Empire reached its apogee. It then embraced all Mesopotamia, from the slopes of Mount Zagros to the out-fall of the two great rivers.

The sovereigns of Chaldæa, like the Pharaohs of Egypt, toiled with intelligence and unremitting perseverance to develop the resources of the vast domain of which they found themselves masters. They set on foot great public works whose memory survives here and there, to this day. From the moment when the

of Kars, which was charged with the delimitation of the Turco-Persian frontier, he was accompanied by sufficient escorts and could stay wherever he pleased. He was an ardent traveller and excellent observer, and science experienced a real loss in his death. The only work which he has left behind him may still be read with pleasure and profit, namely, *Travels and Researches in Chaldæa and Susiana, with an Account of Excavations at Warka, the "Ereich" of Nimrod, and Shúsh, "Shushan the palace" of Esther*, 8vo, London: 1857. The articles contributed by J. E. TAYLOR, English vice-consul at Bassorah, to vol. xv. of the *Journal of the Asiatic Society* (1855), may also be read with advantage. He passed over the same ground, and also made excavations at certain points in Lower Chaldæa which were passed over by Mr. Loftus. Finally, M. de Sarzec, the French consul at Bassorah, to whom we owe the curious series of Chaldæan objects which have lately increased the riches of the Louvre, was enabled to explore the same region through the friendship of a powerful Arab chief. It is much to be desired that he should give us a complete account of his sojourn and of the searches he carried on.

[1] LENORMANT, *Manuel de l'Histoire ancienne*, vol. ii. p. 30.

first colonists, of whatever race, appeared in the country, they must have set about regulating the water courses; they must have taken measures to profit by the floods to form reserves, and to utilize the natural fall of the land, slight though it was, for the distribution of the fertilizing liquid. The first groups of agriculturists were established in the immediate neighbourhood of the Tigris and Euphrates, where nothing more was required for the irrigation of the fields than a few channels cut through the banks of the stream, but when the time arrived for the settlement of the regions at some distance from both rivers, more elaborate measures had to be taken; a systematic plan had to be devised and carried out by concerted action. That the kings of Chaldæa were quite equal to the task thus laid upon them is proved by the inscriptions of HAMMOURABI, one of the successors of Ismi-Dagan, which have been translated and commented upon by M. Joachim Ménant.[1]

The canal to which this king boasts of having given his name, the *Nahar-Hammourabi*, was called in later days the royal canal, *Nahar-Malcha*. Herodotus saw and admired it, its good condition was an object of care to the king himself, and we know that it was considerably repaired by Nebuchadnezzar. It may be compared to a main artery; smaller vessels flowed from it right and left, throwing off in their turn still smaller branches, and ending in those capillaries which carried refreshment to the roots of each thirsty palm. Even in our day the traveller in the province of Bagdad may follow one of these ancient beds for an hour or two without turning to the right or the left, and their banks, though greatly broken in many places, still rise above the surrounding soil and afford a welcome causeway for the voyager across the marshy plains.[2] All these apparent accidents of the ground are vestiges left by the great hydraulic works of that Chaldee Empire which began to loom through the shadows of the past some twenty years ago, and has gradually been taking form ever since. When civilization

[1] J. MÉNANT, *Inscriptions de Hammourabi, Roi de Babylone;* 1863, Paris. These inscriptions are the oldest documents in phonetic character that have come down to us. See OPPERT, *Expédition scientifique*, vol. i. p. 267.

[2] KER PORTER, *Travels in Georgia, Persia*, etc., 4to., vol. ii. p. 390. LAYARD, *Discoveries in the Ruins of Nineveh and Babylon*, p. 535. "Alexander, after he had transferred the seat of his empire to the east, so fully understood the importance of these great works that he ordered them to be cleansed and repaired and superintended the work in person, steering his boat with his own hands through the channels."

makes up its mind to re-enter upon that country, nothing more will be needed for the re-awakening in it of life and reproductive energy, than the restoration of the great works undertaken by the contemporaries of Abraham and Jacob.

According to all appearance it was the Egyptian conquest about sixteen centuries B.C., that led to the partition of Mesopotamia. Vassals of Thothmes and Rameses, called by Berosus the "Arab kings," sat upon the throne of Babylon. The tribes of Upper Mesopotamia were farther from Egypt, and their chiefs found it easier to preserve their independence. At first each city had its own prince, but in time one of these petty kingdoms absorbed the rest, and Nineveh became the capital of an united Assyria. As the years passed away the frontiers of the nation thus constituted were pushed gradually southwards until all Mesopotamia was brought under one sceptre. This consummation appears to have been complete by the end of the fourteenth century, at which period Egypt, enfeebled and rolled back upon herself, ceased to make her influence felt upon the Euphrates. Even then Babylon kept her own kings, but they had sunk to be little more than hereditary satraps receiving investiture from Nineveh. Over and over again Babylon attempted to shake off the yoke of her neighbour; but down to the seventh century her revolts were always suppressed, and the Assyrian supremacy re-established after more or less desperate conflicts.

During nearly half a century, from about 1060 to 1020 B.C., Babylon seems to have recovered the upper hand. The victories of her princes put an end to what is called the FIRST ASSYRIAN EMPIRE. But after one or two generations a new family mounted the northern throne, and, toiling energetically for a century or so to establish the grandeur of the monarchy, founded the SECOND ASSYRIAN EMPIRE. The upper country regained its ascendency by the help of military institutions whose details now escape us, although their results may be traced throughout the later history of Assyria. From the tenth century onwards the effects of these institutions become visible in expeditions made by the armies of Assyria, now to the shores of the Persian Gulf or the Caspian, and now through the mountains of Armenia into the plains of Cappadocia, or across the Syrian desert to the Lebanon and the coast cities of Phœnicia. The first princes whose figured monuments—in contra-

distinction to mere inscriptions—have come down to us, belonged to those days. The oldest of all was Assurnazirpal, whose residence was at Calach (*Nimroud*). The bas-reliefs with which his palace was decorated are now in the Louvre and the British Museum,

Fig. 4.—Genius in the attitude of adoration. From the North-west Palace at Nimroud. Louvre. Drawn by Saint-Elme Gautier.

most of them in the latter.[1] They may be recognized at once by the band of inscription which passes across the figures and reproduces one text again and again (Fig. 4). To Assurnazirpal's son

[1] This palace was the one called the *North-western Palace.*

SHALMANESER III. belongs the obelisk of basalt which also stands in the British Museum. Its four faces are adorned with reliefs and with a running commentary engraved with extreme care.[1]

Shalmaneser was an intrepid man of war. The inscriptions on his obelisk recall the events of thirty-one campaigns waged against the neighbouring peoples under the leadership of the king himself. He was always victorious, but the nations whom he crushed never accepted defeat. As soon as his back was well turned they flew to arms, and again drew him from his repose in the great palace which he had built at Calach, close to that of his father.[2]

Under the immediate successors of Shalmaneser the Assyrian *prestige* was maintained at a high level by dint of the same lavish bloodshed and truculent energy; but towards the eighth century it began to decline. There was then a period of languor and decadence, some echo of which, and of its accompanying disasters, seems to have been embodied by the Greeks in the romantic tale of Sardanapalus. No shadow of confirmation for the story of a first destruction of Nineveh is to be found in the inscriptions, and, in the middle of the same century, we again find the Assyrian arms triumphant under the leadership of TIGLATH PILESER II., a king modelled after the great warriors of the earlier days. This prince seems to have carried his victorious arms as far east as the Indus, and west as the frontiers of Egypt.

And yet it was only under his second successor, SARYOUKIN, or, to give him his popular name, SARGON, the founder of a new dynasty, that Syria, with the exception of Tyre, was brought into complete submission after a great victory over the Egyptians (721-704).[3] In the intervals of his campaigns Sargon built the town and palace which have been discovered at Khorsabad, *Dour-Saryoukin,* or the "town of Sargon."

His son SENNACHERIB equalled him both as a soldier and as a builder. He began by crushing the rebels of Elam and Chaldæa with unflinching severity; in his anger he almost exterminated the inhabitants of Babylon, the perennial seat of revolt; but, on

[1] LAYARD, *The Monuments of Nineveh, from Drawings made on the spot, Illustrated in one Hundred Plates* (large folio, London: 1849), plates 53-56.

[2] It is now called the *Central Palace at Nimroud.*

[3] The chief work upon this period, the most brilliant and the best known in Assyrian history, is the *Faites de Sargon* of MM. OPPERT and MÉNANT (Paris: 1865).

the other hand, he repaired and restored Nineveh. Most of his predecessors had been absentees from the capital, and had neglected its buildings. They had preferred to place their own habitations where they could escape from the crowd and the dangers it implied. But Sennacherib was of another mind. He chose a site well within the city for the magnificent palace which Mr. Layard has been the means of restoring to the world. This building is now known as *Kouyoundjik*, from the name of the village perched upon the mound within which the buildings of Sennacherib were hidden.[1]

Sennacherib rebuilt the walls, the towers, and the quays of Nineveh at the same time, so that the capital, which had never ceased to be the strongest and most populous city of the empire, again became the residence of the king—a distinction which it was to preserve until the fast approaching date of its final destruction.

The son of Sennacherib, Esarhaddon, and his grandson, Assurbanipal, pushed the adventures and conquests of the Assyrian arms still farther. They subdued the whole north of Arabia, and invaded Egypt more than once. They took and retook Memphis and Thebes, and divided the whole valley of the Nile, from the Ethiopian frontier to the sea, into a number of vassal principalities, whose submission was insured by the weakness and mutual jealousies of their lords. Ever prompt in revolt, Babylon again exposed itself to sack, and Susiana, which had helped the insurrection, was pillaged, ravaged, and so utterly crushed that it was on the point of disappearing for ever from the scene as an independent state. There was a moment when the great Semitic Empire founded by the Sargonides touched even the Ægæan, for Gyges, king of Lydia, finding himself menaced by the Cimmerians, did homage to Assurbanipal, and sued for help against those foes to all civilization.[2]

1 The palace occupied the whole of the south-western angle of the mound.

2 Maspero (*Histoire ancienne*, p. 431) refers us to the authors by whom the inscription, in which these relations between the kings of Lydia and Assyria are recounted, was translated and explained. The chief of these is George Smith, who, in his *History of Assurbanipal*, has brought together and commented upon the different texts from which we learn the facts of this brilliant reign. The early death of this young scholar can never be too much regretted. In spite of his comparative youth he added much to our knowledge of Assyria, and, moreover, to him belongs the credit of having recognized the true character of the Cypriot alphabet.

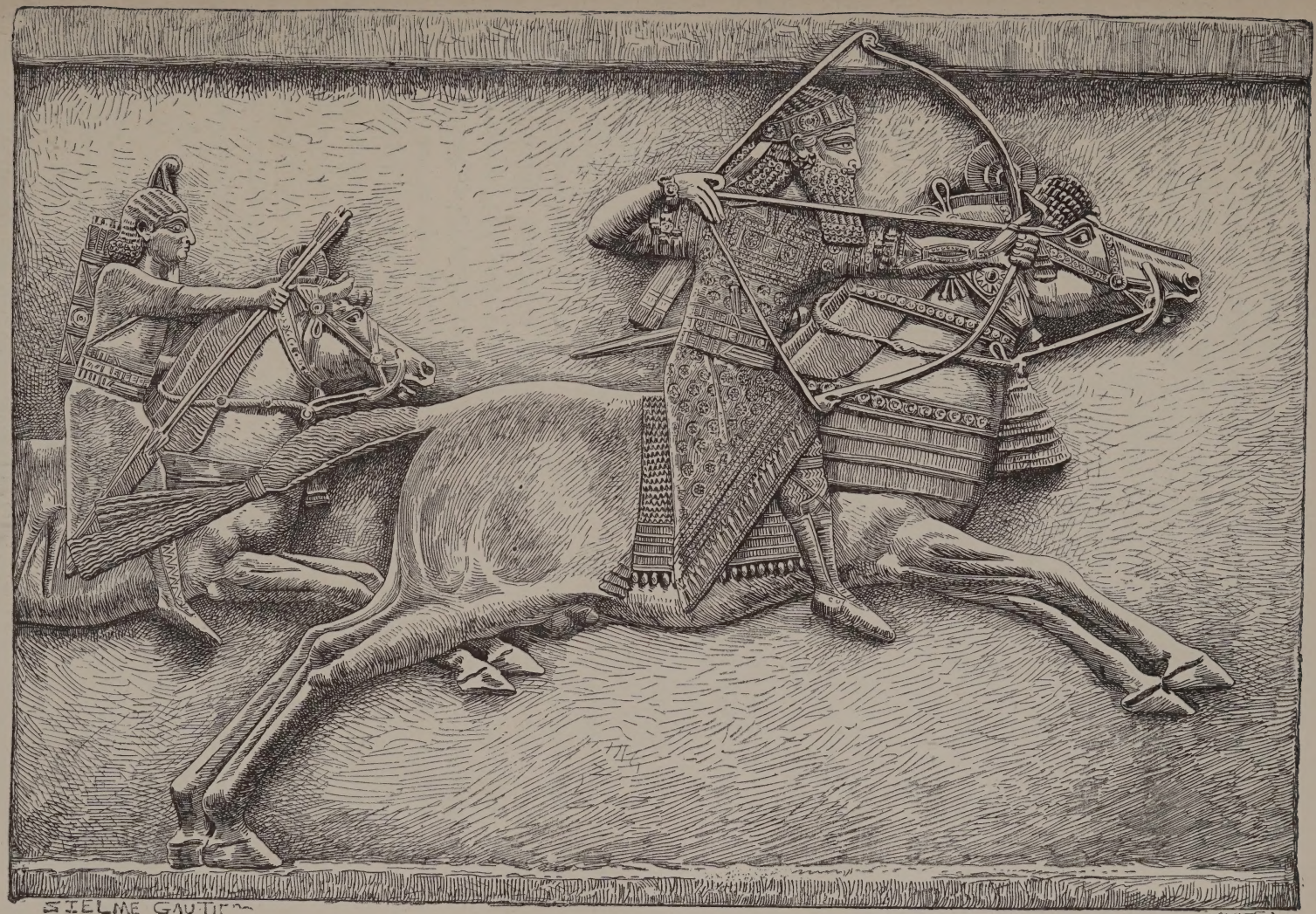


FIG. 5.—Assurbanipal at the chase. Kouyundjik. British Museum. Drawn by Saint-Elme Gautier.

Like their ancestors, these great soldiers were also great builders. In one of his inscriptions Esarhaddon boasts of having built ten palaces and thirty-six temples in Assyria and Chaldæa.[1] Some traces of one of these palaces have been found within the *enciente* of Nineveh, at Nebbi-Younas ; but it was chiefly upon Nimroud that Esarhaddon left marks of his magnificence. The palace called the South-western Palace, in consequence of its position in the mound, was commenced by him. It was never finished, but in plan it was more grandiose than any other of the royal dwellings. Had it been complete it would have included the largest hall ever provided by an Assyrian architect for the pomps of the Ninevitish court.

Assurbanipal was cruel in victory and indefatigable in the chase. Judging from his bas-reliefs he was as proud of the lions he killed by hundreds in his hunts, as of the men massacred by thousands in his wars and military promenades, or of the captives driven before him, like herds of helpless cattle, from one end of Asia to the other. He appears also to have been a patron of literature and the arts. It was under his auspices that the collection of inscribed terra-cotta tablettes was made in the palace at Kouyundjik,[2] of which so many fragments have now been recovered. He ordered the transcription of several ancient texts which had been first cut, many centuries before, at Ur of the Chaldees. In fact, he collected that royal library whose remains, damaged by time though they be, are yet among the most valued treasures of the British Museum. Documents of many kinds are to be found among them : comparative vocabularies, lists of divinities with their distinguishing epithets, chronological lists of kings and eponymous heroes, grammars, histories, tables of astronomical observations, scientific works of various descriptions, &c., &c. These tablets were classified according to subject and arranged in several rooms of the upper story, so that they suffered much in the fall of the floors and roofs. Very few are quite uninjured but in many cases the pieces have been successfully put together. When first discovered these broken remains covered the floors of the buried palace to the depth of about two feet.[3]

[1] RAWLINSON, *The Five Great Monarchies*, vol. ii. p. 196.

[2] The *Northern Palace.*

[3] This library has always attracted the attention of Assyriologists, and the best

The building was no less remarkable for the richness and beauty of its bas-reliefs. We shall have occasion to reproduce more than one of the hunting scenes which are there represented, and of which we give a first illustration on the opposite page. Some remains of another palace built by the same prince have been discovered in the mound of Nebbi-Younas.

Never had the empire seemed more strong and flourishing than now, and yet it was close to its fall. The Sargonids understood fighting and pillage, but they made no continuous effort to unite the various peoples whom they successfully conquered and trampled underfoot. The Assyrians have been compared to the Romans, and in some respects the parallel is good. They showed a Roman energy in the conduct of their incessant struggles, and the soldiers who brought victory so often to the standards of the Sennacheribs and Shalmanesers must have been in their time, as the legions of the consuls and dictators were in later years, the best troops in Asia ; they were better armed, better disciplined, and better led than those of neighbouring states, more used to fatigue, to long marches and rapid evolutions. The brilliance of their success and its long duration are thus explained, for the chiefs of the empire never seem to have had the faintest suspicion of the adroit policy which was afterwards to bind so many conquered peoples to the Roman sceptre. The first necessity for civilized man is security ; the hope, or rather the certainty, of enjoying the fruits of his own industry in peace. When this certainty is assured to him he quickly pardons and forgets the injuries he has suffered. This fact has been continually ignored by Oriental conquerors and by Assyrian conquerors more than any others. The Egyptians and Persians appear now and then to have succeeded in reconciling their subject races, and in softening their mutual hatreds by paying some attention to their political wants. But the Assyrians reckoned entirely upon terror. And yet one generation was often enough to obliterate the memory of the most cruel disasters. Sons did not learn from the experience of their fathers, and, although

preserved of its texts have been published at various times under the supervision of Sir Henry Rawlinson and George Smith. These texts have been translated into English, French, and German, and much discussed by the scholars of all three nations. The reader may also consult the small volume contributed by M. J. Ménant to the *Bibliothèque oriental elzévirienne* under the title: *La Bibliothèque du Palais de Ninive*, 1 vol. 18mo., 1880 (Ernest Leroux).

dispersed and decimated times without number, the enemies of Assyria never acquiesced in defeat. In the subjection imposed upon them they panted for revenge, and while paying their tributes they counted the hours and followed with watchful eye every movement of their master. Let him be carried into any distant province, or engaged in lengthened hostilities, and they at once flew to their arms. If the prince were fighting in Armenia, or on the borders of the Caspian, Chaldæa and Susiana would rise against him; if disputing the Nile valley with the Ethiopians, Syria would revolt in his rear, and the insurrection would spread across the plains of Asia with the rapidity of a prairie fire.

Thus no question received a final settlement. On the morrow of the hardest won victory the fight had to begin anew. The strongest and bravest exhausted themselves at such a game. Each campaign left gaps in the ranks of the governing and fighting classes, and in time, their apparent privilege became the most crushing of burdens. The same burden has for a century past been slowly destroying the dominant race in modern Turkey. Its members occupy nearly all the official posts, but they have to supply the army as well. Since the custom of recruiting the latter with the children of Christians, separated from their families in infancy and converted to Islamism, has been abandoned, the military population has decreased year by year. One or two more wars like the last and the Ottoman race will be extinct.

Losses in battle were then a chief cause of decadence in a state which failed to discipline its subject peoples and to incorporate them in its armies. A further explanation is to be found in the lassitude and exhaustion which must in time overtake the most warlike princes, the bravest generals, and the most highly tempered of conquering races. A few years of relaxed watchfulness, an indolent and soft-hearted sovereign, are enough to let loose all the pent up forces of insubordination and to unite them into one formidable effort. We thus see that, in many respects, nothing could be more precarious than the prosperity of that Assyria whose insolent triumphs had so often astonished the world since the accession of Sargon.

The first shock came from the north. About the year 632 all western Asia was suddenly overrun by the barbarians whom the Greeks called the Cimmerian Scythians. With an *élan* that nothing

could resist, they spread themselves over the country lying between the shores of the Caspian and the Persian Gulf; they even menaced the frontiers of Egypt. The open towns were pillaged and destroyed, the fields and agricultural villages ruthlessly laid waste. Thanks to the height and thickness of their defending walls Nineveh, Babylon, and a few other cities escaped a sack, but Mesopotamia as a whole suffered cruelly. The dwellers in its vast plains had no inaccessible summits or hidden valleys to which they could retreat until the wave of destruction had passed on. At the end of a few years the loot-laden Scythians withdrew into those steppes of central Asia whence their descendants were again, some six centuries later, to menace the existence of civilization; and they left Assyria and Chaldæa half stripped of their inhabitants behind them.

The work begun by the Scythians was finished by the Medes. These were Aryan tribes, long subject to the Assyrians, who had begun to constitute themselves a nation in the first half of the seventh century, and, under the leadership of CYAXARES, the real founder of their power, had already attacked Nineveh after the death of Assurbanipal. This invasion brought on a kind of forced truce, but when the Medes had compelled the Scythians to retreat to their deserts by the bold stroke which Herodotus admires so much, they quickly resumed the offensive.[1] We cannot follow all the fluctuations of the conflict; the information left by the early historians is vague and contradictory, and we have no cuneiform inscriptions to help us out. After the fall of Nineveh cylinders of clay and alabaster slabs were no longer covered with wedges by the Assyrian scribes. They had recounted their victories and conquests at length, but not one among them, so far as we know, cared to retrace the dismal history of final defeat.

All that we can guess is that the last sovereign of Nineveh fell before a coalition in which Media and Chaldæa played the chief parts.[2] NABOPOLASSAR, the general to whom he confided

[1] HERODOTUS, i. 106.

[2] HERODOTUS (i. 106) alludes to this capital event only in a word or two, in which he promises to give a more complete account of the whole matter in another work—ἐν ἑτέροισι λόγοισι—doubtless in that *History of Assyria* ("Ασσύριοι λόγοι" i. 184) which was either never written or soon lost. Diodorus, who gives circumstantial details both of the coalition and the siege, dates it a century too early, changes all the names, and mixes up many fables with his recital (ii. 23-28). In forming a just idea of the catastrophe and of its date we have to depend chiefly upon the lost

the defence of Babylon, entered into an alliance with Cyaxares. ASSUREDILANI shut himself up in his capital, where he resisted as long as he could, and finally set fire to his palace and allowed himself to be burned alive rather than fall living into the hands of his enemies (625 B.C.). Nineveh, "the dwelling of the lions," "the bloody city," saw its last day; "Nineveh is laid waste,' says the prophet Nahum, "who will bemoan her?" [1]

The modern historian will feel more pity for Assyria than the Jewish poet, the sincere interpreter of a national hatred which was fostered by frequent and cruel wounds to the national pride. We can forgive Nineveh much, because she wrote so much and built so much, because she covered so much clay with her arrow-heads, and so many walls with her carved reliefs. We forgive her because to the ruins of her palaces and the broken fragments of her sculpture we owe most of our present knowledge of the great civilization which once filled the basin of the Tigris and Euphrates. The kings of Assyria went on building palaces up to the last moment. Each reign added to the series of royal dwellings in which every chamber was filled with inscriptions and living figures. Some of these structures were raised in Nineveh itself, some in the neighbouring cities. At the south-east angle of the mound at Nimroud, the remains of a palace begun by Assuredilani have been excavated. Its construction had been interrupted by the Medes and Scythians, for it was left unfinished. Its proposed area was very small. The rooms were narrow and ill arranged, and their walls were decorated at foot with slabs of bare lime-stone instead of sculptured alabaster. Above the plinth thus formed they were covered with roughly executed paintings upon plaster, instead of with enamelled bricks. Both plan and decoration show evidence of haste and disquiet. The act of sovereignty had to be done, but all certainty of the morrow had vanished. From the moment in which Assyrian sculpture touched its highest point in the reign of Assurbanipal, the material resources of the kingdom and the supply of skilled workmen had slowly but constantly diminished.[2]

historians, such as Abydenus and Alexander Polyhistor, fragments of whose works have been preserved for us by Eusebius and Georgius Syncellus. See RAWLINSON, *The Five Great Monarchies*, etc., vol. ii. pp. 221-232.

[1] Nahum ii. 11; iii. 1, 7.

[2] LAYARD, *Nineveh and its Remains*, vol. ii. pp. 38-39. *Discoveries*, p. 655.

Nineveh destroyed, the empire of which it was the capital vanished with it. The new Babylonian empire, the Empires of the Medes and of the Persians followed each other with such rapidity that the Assyrian heroes and their prowess might well have been forgotten. The feeble recollections they left in men's minds became tinged with the colours of romance. The Greeks took pleasure in the fable of Sardanapalus: they developed it into a moral tale with elaborate conceits and telling contrasts, but they did not invent it from the foundation. The first hint of it must have been given by legends of the fall and destruction of Nineveh current in the cities of Ecbatana, Susa, and Babylon when Ctesias was within their walls.

After the obliteration of Nineveh the Medes and Chaldæans divided western Asia between them. A family alliance was concluded between Nabopolassar and Cyaxares at the moment of concerting the attack which was to have such a brilliant success, and either in consequence of that alliance or for some unknown motive, the two nations remained good friends after their common victory. The Medes kept Assyria, and extended themselves to the north, over the whole country between the Caspian and the Black Sea. They would have carried their frontiers to the Ægean but for the existence of the Lydian monarchy, which arrested them on the left bank of the Halys. To the south of these regions the Second Chaldæan Empire took shape (625-536 B.C.). It made no effort to expand eastwards over that plateau of Iran where the Aryan element, as represented by the Medes and soon afterwards by the Persians, had acquired an ever-increasing preponderance, but it pretended to the sovereignty of Egypt and Syria. In the former country, however, the Saite princes had rekindled the national spirit, and the frontiers were held successfully against the invaders. It was otherwise with the Jewish people. Sargon had taken Samaria and put an end to the Israelitish kingdom; that of Judah was destroyed by Nebuchadnezzar. Thanks to its insular position, Tyre escaped the lot of Jerusalem, but the rest of Phœnicia and all northern Syria were subdued by Babylon.

In all this region the Semitic element had long been encroaching upon those other elements which had preceded and been associated with it at the commencement. In all Mesopotomia only one tongue was spoken and written, the tongue we now know

as *Assyrian*, but should call *Assyro-Chaldæan*. The differences of dialect between north and south were of little importance, and the language in question is that of the inscriptions in both countries.

Another change requires to be mentioned. Our readers will remember the names of Ur, Erech, and many other cities which played a great part in the early history of the country, and were all capitals in turn. Babylon, however, in time acquired an unquestioned supremacy over them all. The residence of the Assyrian viceroys during the supremacy of the northern kingdom, it became the metropolis of the new empire after the fall of Nineveh. Without having lost either their population or their prosperity, the other cities sunk to the condition of provincial towns.

For some hundred years Babylon had been cruelly ill-treated by the Assyrians, and never-ending revolts had been the consequence. Nabopolassar began the work of restoration, and his son NEBUCHADNEZZAR, the real hero of the Second Chaldee Empire, carried it on with ardour during the whole of his long reign. "He restored the canals which united the Tigris to the Euphrates above Babylon; he rebuilt the bridge which gave a means of communication between the two halves of the city; he repaired the great reservoirs in which the early kings had caught and stored the superfluous waters of the Euphrates during the annual inundation. Upon these works his prisoners of war, Syrians and Egyptians, Jews and Arabs, were employed in vast numbers. The great wall of Babylon was set up anew; so was the temple of Nebo at Borsippa; the reservoir at Sippara, the royal canal, and a part at least of Lake Pallacopas, were excavated; Kouti, Sippara, Borsippa, Babel, rose upon their own ruins. Nebuchadnezzar was to Chaldæa what Rameses II. was to Egypt, and there is not a place in Babylon or about it where his name and the signs of his marvellous activity cannot be found."[1]

Nebuchadnezzar reigned forty-three years (604-561), and left Babylon the largest and finest city of Asia. After his death the decadence was rapid. A few years saw several kings succeed one another upon the throne, while a revolution was being accomplished upon the plateau of Iran which was destined to be fatal to Chaldæa. The supremacy in that region passed from

[1] MASPERO, *Histoire ancienne*, p. 506.

the feeble and exhausted Medes into the hands of the Persians, another people of the same stock. The latter were a tribe of mountaineers teeming with native energy, and their strength had been systematically organized by a young and valiant chief, in whom they had full confidence because he had given them confidence in themselves. Cyrus began by leading them to the conquest of Media, Assyria, and Asia Minor, and by forcing the nations who dwelt between the southern confines of Persia and the mountains of Upper India to acknowledge his supremacy. Finally, he collected his forces for an attack upon Chaldæa, and, in 536, Babylon fell before his arms.

And yet Babylon did not disappear from history in a day; she was not destroyed, like Nineveh, by a single blow. Cyrus does not appear to have injured her. She remained, under the Persian kings, one of the chief cities of the empire. But she did not give up her habit of revolting whenever she had a chance, and Darius, the son of Hystaspes, tired of besieging her, ended by dismantling her fortifications, while Xerxes went farther, and pillaged her temples. But the chief buildings remained standing. Towards the middle of the fifth century they excited the admiration of Herodotus, and, fifty years later, that of Ctesias. Strabo, on the other hand, found the place almost a desert.[1] Babylon had been ruined by the foundation of Seleucia, on the Tigris, at a distance of rather more than thirty miles from the ancient capital. Struck by the beauty of its monuments and the advantages of its site, Alexander projected the restoration of Babylon, and proposed to make it his habitual residence; but he died before his intention could be carried out, and Seleucus Nicator preferred to build a town which should be called after himself, and should at least perpetuate his name. The new city had as many as six hundred thousand inhabitants. Under the Parthians Ctesiphon succeeded to Seleucia, to be replaced in its turn by Bagdad, the Arab metropolis of the caliphs. This latest comer upon the scene would have equalled its predecessors in magnificence had the routes of commerce not changed so greatly since the commencement of the modern era, and, above all, had the Turks not been masters of the country. There can be no doubt that the next generation will see the civilization of the

[1] Strabo, xvi. i. 5.

West repossess itself of the fertile plains in which it was born and nursed, and a railway carried from the shores of the Mediterranean to those of the Persian Gulf. Such a road would be the most direct route from Europe to India, and its construction would awake Chaldæa to the feverish activity of our modern life. Peopled, irrigated, and tilled into her remotest corners, she would again become as prolific as of old. Her station upon the wayside would soon change her towns into cities as populous as those of Nebuchadnezzar, and we may even guess that her importance in the future would reduce her past to insignificance, and would make her capital such a Babylon as the world has not yet seen.

§ 6. *The Chaldæan Religion.*

WE know much less about the religion of Chaldæa than about that of Egypt. The religious monuments of Mesopotamia are much fewer than those of the Nile valley, and their significance is less clear. Their series are neither so varied nor so complete as those of the earlier civilization. Certain orders of subjects are repeated to satiety, while others, which would be more interesting, are completely absent.

It is in funerary inscriptions that the heart of man, touched by the mystery of the tomb, lays bare its aspirations with the greatest frankness and simplicity. Moved by the desire to escape annihilation on the one hand and posthumous sufferings on the other, it is there that he addresses his most ardent appeals to the supreme power, and allows us to arrive at a clear understanding of his ideas as to the action, the character, and the power of the divinity. At Memphis, Abydos, and Thebes, documents of this kind have been found in thousands, the figures accompanying them serving as commentaries upon their text, and helping us to clear up all doubts as to their nature. We thus have voices speaking from the depths of every Egyptian tomb; but the Chaldæan sepulchre is mute. It has neither inscriptions, nor bas-reliefs, nor paintings. No Assyrian burial-place has yet been found.

Dedications, phrases of homage to this or that divinity, the names and distinguishing epithets of the gods, all these have been met with in Mesopotamia; sometimes *in situ*, as artistic

decorations, sometimes in engraved fragments of unknown origin. We may say the same of the different divine types. Sometimes we find them in monumental sculpture, more often on those seals which we call *cylinders*. But how obscure, incomplete, and poor such documents are in comparison with the long pages of hieroglyphs in which the Pharaohs address their gods or make them speak for themselves! How infinitely inferior in expression and significance to the vast pictures which cover the walls of the Theban temples and bring all the persons of the Egyptian pantheon before us in their turn! What hope is there that excavations in Chaldæa and Assyria will ever provide us with such remains as those groups of statues which fill our museums, in which the effigy of a single god is repeated hundreds of times with every variation of type, pose, and attribute given to it by the Egyptian theosophy? On the one hand, what abundance, we may say what super-abundance; on the other, what poverty, what gaping breaches in the chain of material history! Among the gods and genii, whose names have come down to us, how few there are whose images we can surely point to; and, again, what a small number of figures we have upon which we can put a name without fear of error!

To write the history of these beliefs is a difficult task, not only because the *idols*, as they would once have been called, are few, and the Chaldæo-Assyrian inscriptions historical and narrative rather than religious and dogmatic, but also because the interpretation of the texts, especially of the most ancient, is much less advanced than that of the hieroglyphs. When documents in the old language, or at least written in the primitive ideographic characters, are attacked, the process is one of divination rather than of translation in the strict sense of the word.

Another difficulty has to be noticed; classic literature does little or nothing to help us in filling up these voids and dissipating the obscurities they cause. The Greeks were guilty of many errors when they attempted to understand and describe foreign religions, but their relations with the Egyptians and Phœnicians were so prolonged, and, towards the end, so intimate, that at last they did succeed in grasping some of the doctrine taught in the sanctuaries of Heliopolis and Thebes, of Byblos and Hierapolis. With their lively intellects they could hardly frequent the temples, examine the sacred images, and question the priests as to the national rites

and ceremonies without discovering at least a part of the truth. It was not so with Chaldæa. Babylon was too far off. Until the time of Alexander's conquests the boldest travellers did no more than glance into its streets and monumental buildings, and by that time Nineveh had long ceased to exist. It was only under the first of the Seleucidæ, when a Macedonian kingdom was established in the centre of Mesopotamia, that the curiosity of the Greeks led them to make inquiries similar to those they had pursued for some three centuries in the valley of the Nile. We cannot doubt that this desire for information arose among the followers of those princes themselves; many of them were very intelligent men; and when Berosus determined to write his history in Greek, he may have wished to answer the questions asked in his hearing by the Greek writers and philosophers; by those Alexandrians who were not all at Alexandria. Unfortunately, nearly the whole of his work has been lost.

At the end of a century and a half Babylon shook off Hellenism, and Mesopotamia fell into the hands of the Parthians. These people affected, in some degree, the poetry and arts of Greece, but at bottom they were nothing more than Oriental barbarians. Their capital, Ctesiphon, seems never to have attracted learned men, nor ever to have been a seat of those inquiries into the past of the older races in which the cultured cities of the Greek world took so great a pleasure. When Rome became the heir of Greece and the perpetuator of her traditions, we may believe that, under Trajan, she set about establishing herself in the country; but she soon found it necessary to withdraw within the Euphrates, and it was her loss when the Parthians fell from power to be succeeded in the lordship of Mesopotamia by the Sassanids.[1]

We see, then, that, with the exception of one short period, Chaldæa was what the Greeks called a barbarous country after the

[1] The *History of the Assyrians and Medes*, which EUSEBIUS (*Préparation évangélique*, 1, 12, and 41) attributes to the writer whom he calls ABYDENUS, dates perhaps from the period when the Roman Empire turned its attention to the basin of the Euphrates and attempted to regain possession of it. The few extant fragments of this author have been collected in Ch. MÜLLER'S *Fragmenta Historicorum Græcorum*, vol. iv. p. 279. We know nothing as to when he lived, but he wrote in the Ionian dialect, as did ARRIAN in his book on India, and it would seem difficult to put him later than the second century. It is probable that his undertaking belonged to that movement towards research which began in the reign of Augustus and was prolonged to the last years of the Antonines.

fall of its native royalty, and that it will help us little in our endeavour to grasp the nature and extent of its religious beliefs. The last of the Athenian philosophers, Damascius, has certainly left us some information as to the Babylonish deities which seems to have been taken from authentic sources.[1] This, together with a few fragments from the work of Berosus, is all that Hellenic tradition has handed down to us. There is nothing here which can be even remotely compared to the treatises upon Isis and Osiris and the Goddess of Syria preserved under the names of PLUTARCH and LUCIAN.

But we cannot enter upon the discussion of Chaldæan art without making an effort to describe the gist of the national religion and its principal personages. In every country the highest function of art is to translate the religious conceptions of its people into visible forms. The architect, the sculptor, the painter, each in his own fashion, carries out this idea; the first by the dimensions he gives to his temples, by their plan, and by the decoration of their walls; the second and third by their choice of feature, expression and attribute for the images in which the gods become visible to the people. The clearness and precision with which this embodiment of an idea is carried out will depend upon the natural aptitudes of the race and the assistance it receives from the capabilities of the materials at hand. Plastic creations, from their very nature, must always be inferior to the thought they are meant to express; by no means can they go beyond it. This truth is nowhere more striking than in the art of Greece. Fortunately we are there able to see how a single theme is treated, in the first place, in poetry,—the interpreter of the popular beliefs,—and afterwards in art; we can discover how Phidias and Praxiteles, to speak only of sculptors, treated the types created by Homer and Hesiod. In the case of Chaldæa we have no such opportunity. She has left us neither monuments of sacerdotal theology like those we have inherited in such countless numbers from Egypt, nor the brilliant imagery in which the odes and epics of the Greeks sketched the personalities of

[1] Δαμασκιόυ διαδόχου ἀπορίαι καὶ λύσεις περὶ τῶν πρωτῶν ἀρχῶν (edition published by Kopp, Frankfort-on-the-Main, 1826, 8vo), ch. 125. Ch. Émile RUELLE, *Le Philosophe Damascius; Étude sur sa Vie et ses Ouvrages, suivie de neuf Morceaux inédits, Extraits du Traité des premiers Principes et traduits en Latin* (in the *Revue archéologique*, 1861), fragments i. and ix.

the gods. But even in Chaldæa art was closely united with religion, and, in spite of the difficulty of the task, the historian of art must endeavour to pierce the shadows that obscure the question, and discover the bond of union between the two.

Thanks to the more recently deciphered texts, we do know something of the religious rites and beliefs of the oldest nation that inhabited Mesopotamia and left its trace in history. Whether we call them Accads or Sumirs, or by both names at once, we know that to them the whole universe was peopled by a vast crowd of spirits, some dwelling in the depths of the earth, some in the sea, while others floated on the wind and lighted in the sky the fires of the day and night.[1]

As, among men, some are good and some bad, so among these spirits some were beneficent and others the reverse, while a third class was helpful or mischievous according as it was propitiated by offerings or irritated by neglect. The great thing was to know how to command the services of the spirits when they were required. The employment of certain gestures, sounds, and articulate words had a mysterious but irresistible effect upon these invisible beings. How the effect was produced no one asked, but that it was produced no one doubted. The highest of the sciences was magic, for it held the threads by which the denizens of the invisible world were controlled; the master of the earth was the sorcerer who could compel them to obey him by a nod, a form of words, or an incantation. We can form some idea of the practical results of such a system from what we know of the manners and social condition of those Turanian races in Asiatic Russia who profess what is called *chamanism*, and from the condition of most of the negro tribes and Polynesian islanders. Among all these people, who still remain in a mental condition from which the rest of the species has long escaped, we find the highest places occupied by priest-magicians. Now and then popular fury makes them pay cruelly for the ill-success of their conjurations, but as a rule their persons and the illimitable power ascribed to them inspire nothing but abject fear.

[1] On this subject the reader should consult M. Fr. LENORMANT'S *La Magie chez les Chaldéens et les Origines Accadiennes*, Paris: 1874, 8vo. The English translation, dated 1877, or, still better, the German version published at Jena in 1878 (*Die Magie und Wahrsagekunst der Chaldæer*, 8vo), will be found more useful than the French original. Both are, in fact, new editions, with fresh information.

Fear is, indeed, the ruling sentiment in all religions in which a belief in spirits finds a place. A man can never be sure that, in spite of all his precautions, he has not incurred the displeasure of such exacting and capricious masters. Some condition of the bargain which is being perpetually driven with protectors who give nothing for nothing, may have been unwittingly omitted. "The spirits and their worshippers are equally selfish. As a general rule, the mischievous spirits receive more homage than the good ones; those who are believed to live close at hand are more dreaded than those at a distance; those to whom some special *rôle* is assigned are considered more important than spirits with a wider but less definite authority." [1]

There were, of course, moments when men turned with gratitude towards the hidden benefactor to whom they believed themselves indebted for some unhoped-for cure or unexpected success, when joy and confidence moved their hearts at the thought of the efficacious protection they had secured against future ills; but such moments were few and short. The habitual feeling was one of disquietude, we might almost say of terror, so that when the imagination endeavoured to give concrete forms to the beings in question, it figured them rather as objects of fear than love. The day arrived for art to attempt the material realization of the dreams which until then had been dimly seen in sleep or in the still more confused visions of the waking hours, and for this hideous and threatening features were naturally chosen. It is thus that the numerous figures of demons found in Chaldæa and Assyria, sometimes in the bas-reliefs, sometimes in the shape of small bronzes and terra-cottas, are accounted for. A human body is crowned with the head of an angry lion, with dog's ears and a horse's mane; the hands brandish long poignards, the feet are replaced by those of a bird of prey, the extended claws seeming to grasp the soil (Fig. 6). The gestures vary; the right arm is sometimes stretched downwards at full length, sometimes bent at the elbow, but the combination of forms, the character of the figure and its intention is always the same. We shall encounter this type again when we come to speak of Cappadocia.

[1] Tiele, *Manuel de l'Histoire des Religions* (Leroux, 1880, 8vo). In our explanation of the Chaldæo-Assyrian religions we shall follow this excellent guide, supplementing it by information taken from another work by the same author, *Histoire comparée des anciennes Religions de l'Égypte et des Peuples Sémitiques*—both from the Dutch.

This belief in spirits is the second phase that the primitive religion, which we studied in Egypt under the name of *fetishism* or *animism*, has to pass through.[1] In the beginning mere existence is confounded with life. All things are credited with a soul like that felt by man within himself. Such lifeless objects as

FIG. 6.—Demons ; from the palace of Assurbanipal at Kouyundjik. British Museum. Drawn by Saint-Elme Gautier.

stones and mountains, trees and rivers, are worshipped ; so too are both useful and noxious animals.[2] Childish as it seems to us

[1] *A History of Art in Ancient Egypt*, vol. i. pp. 47-57.

[2] At Erzeroum Mr. LAYARD heard of some Kurdish tribes to the south-west of that place who, he was told, "are still idolatrous, worshipping venerable oaks, great trees, huge solitary rocks, and other grand features of nature." *Discoveries*, p. 9.

the worship of spirits is at least an advance upon this. It presupposes a certain power of reflection and abstraction by which men were led to conclude that intelligence and will are not necessarily bound up with a body that can be seen and touched. Life has been mobilized, if we may use such a phrase, and thus we arrive at *polydemonism;* by which we mean the theory that partitions the government of the world among a crowd of genii, who, though often at war among themselves, are always more powerful than man, and may do him much harm unless he succeeds in winning their help and good-will.

The worship of stars is but one form of this religious conception. The great luminaries of night and day were of course

FIG. 7.—Demons. Louvre.

invested with life and power by men who felt themselves in such complete dependence upon them.

So far as we can judge, the primitive form of fetishism left but feeble traces in the religion of civilized Chaldæa and Assyria. The signs are few of that worship of sacred stones which played such an important part among the Semites of the west, and even among the Greeks,[1] neither can we find that either fear or

[1] François LENORMANT, *Les Bétyles* (extracted from the *Revue de l'Histoire des Religions*, p. 12):—"The cuneiform inscriptions mention the seven black stones worshipped in the principal temple of Urukh in Chaldæa, which personify the seven planets." In the same paper a vast number of facts are brought together which show how widely spread this worship was in Syria and Arabia, and with what persistence it maintained itself, at least until the preaching of Islamism. It would

gratitude ever led to the worship of animals, the docile helpers or the redoubtable enemies of man, in the same degree as it did in Egypt. And yet Chaldæa and Assyria followed the example of Egypt in mixing up the forms of men with those of animals in

FIG. 8.—Eagle-headed divinity, from Nimroud. Louvre. Alabaster. Height forty inches. Drawn by Saint-Elme Gautier.

their sacred statues. This we know both from the texts and the figured monuments. But it was not only in the budding art of a primitive population that such combinations were employed, and it

be easy to show that it still subsists in the popular superstitions. As to this worship among the Greeks, see also the paper by M. HEUZEY, entitled, *La Pierre sacrée d'Antibes* (*Mémoires de la Société des Antiquaires de France*, 1874, p. 99).

was not only the inferior genii that were represented in such singular fashion. When, by the development of religion, the capricious and unruly multitude of spirits had been placed under the supremacy of a small number of superior beings, these, whom we may call the sovereign gods, were often figured with the heads of lions or eagles (see Fig. 8). Before any of these images had been found we already knew from Berosus what the deity was like by whom the first germs of art and letters had been sown upon the earth. "He had the whole body of a fish, but beneath his fish's head he had another head [that of a man], while human feet appeared below his fish's tail. He had also the voice of a man, and his images are yet to be found."[1] More than one sculptural type has been found answering to this description (see Fig. 9).

Fig. 9. — Anou or Dagon. Nimroud. Layard, *Discoveries*, p. 350.

Why did art, in creating divine types, give such prominence to features borrowed from the lower animals? Was it impelled by mere inability to distinguish, by varieties of feature, form and attitude, between the different gods created by the imagination? Or must we look upon the attribution to this or that deity, of forms borrowed from the bull, the lion, or the eagle, as a deliberate act of symbolism, meant to suggest that the gods in question had the qualities of the animals of which their persons were partly made up? In order to arrive at a just conclusion we must, of course, take account both of the resistance of the material and of the facilities which a transparent system of allegory would give to the artist in the working out of his thought; we must also admit perhaps that the national intelligence had been prepared to look for and admire such combinations. It may have been predisposed towards them by the habits of admiration for the patient strength of the draught-ox and the destructive vigour of the eagle and the lion contracted during a long series of years.

Both historical analogy and the examination of sculptured types

[1] Berosus, fragment i. § 3, in the *Fragmenta Historicum Græcorum* of Ch. Müller, vol. ii. p. 496.

lead us to think that the tribes of Mesopotamia passed through the same religious phases as those of the Nile valley, but it would appear that the most primitive beliefs were less long-lived in Chaldæa than in Egypt, and that they were engraved less deeply upon the heart of the nation.

The belief in sorcery never died out in Chaldæa; up to the very last days of antiquity it never lost its empire at least over the lower orders of the people. As time passed on the priests joined the practice of astrology to that of magic. How the transition took place may readily be understood. The magician began by seeking for incantations sufficiently powerful to compel not only the vulgar crowd of genii to obedience, but also those who, in the shape of stars great and small, inhabited the celestial spaces and revealed themselves to man by the brilliance of their fires. Supposing him to be well skilled in his art his success would be beyond doubt so far as his clients were concerned.

Many centuries after the birth of this singular delusion even the Greeks and Romans did not refuse to believe that magic formulæ had sometimes the powers claimed for them. "Incantation," cries an abandoned lover in Virgil, "may bring down the very moon from the sky:"

"*Carmina vel cælo possunt deducere lunam.*" [1]

Although simple minds allowed themselves to believe that such prodigies were not quite impossible, skilled men could not have failed to see that in spite of the appeals addressed to them by priests and magicians, neither sun nor moon had ever quitted their place in the firmament or interrupted their daily course. As the hope of influencing the action of the stars died away, the wish to study their motions grew stronger. In the glorious nights of Chaldæa the splendour of the sky stirred the curiosity as well as the admiration of mankind, and the purity of the air made observation easy. Here and there, in the more thickly inhabited and best irrigated parts of the plain, gentle mists floated over the earth at certain periods, but they were no real hindrance to observation. To escape them but a slight elevation above the plain was required. Let the observer

[1] VIRGIL, *Bucolics*, viii. 69. See in the edition of Benoist (Hatchette, 8vo, 1876) passages cited from Horace and Ovid, which prove that the superstition in question was then sufficiently widespread to enable poets to make use of it without too great a violation of probability.

raise himself a few feet above the tallest palm trees, and no cloud interposed to prevent his eyes from travelling from the fires that blazed in the zenith to the paler stars that lay clustered upon the horizon. There were no accidents of the ground by which the astronomer could lift himself above the smoke of cities or the mists hanging over the lakes and canals, and to make up for their absence the massive and many-storied towers which men began to construct as soon as they understood how to make bricks and set them, must soon have come into use. These towers were built upon artificial mounds which were in themselves higher than the highest house or palm. The platforms on their summits gave therefore the most favourable conditions possible for the interrogation of the heavens before the invention of the telescope.[1]

Thanks to the climate and to these great observatories which rose very early in Chaldæan history all over the plain, the skies could be read like an open book; and the Chaldæans were fond of such reading, because it afforded them, as they thought, a sure means of predicting the future. They had no great belief in the power of their most formidable conjurations to affect the majestic regularity of the heavenly movements—a regularity which must have impressed each generation more strongly than the last, as it compared its own experience with the registered observations of those that had gone before it. But they could not persuade themselves that the powerful genii who guided those great bodies on their unending voyage could be indifferent to the destinies of man, and that there was no bond of union, no mysterious connection, between him and them. They pretended to discover this hidden bond. When a child uttered its first cry, an intimate relation, they declared, was established between the new life and some one of the countless bodies that people space. The impassive star, they said, governed the life and fortune of the mortal who, perhaps, ignorantly looked upon himself as his own master and the master of some of those about him. The future of each man was decided by the character of the star that presided at his birth, and according to the position occupied by it in the sky at the time of any important action of his life, that action

[1] This was very clearly seen by the ancients. It could not be put better than by Cicero: "Principio Assyrii, propter planitiem magnitudinemque regionum quas incolebant, cum cœlum ex omni parte patens et apertum intuerentur, trajectiones motusque stellarum observaverunt."—*De Divinatione*, i. 1, 2.

would be fortunate in its issue or the reverse.[1] These statements contain the germ of all the future developments of astrology. Among all civilized peoples this imaginary science has at last fallen from its former repute. From the remotest antiquity down to the end of the sixteenth century, and, in some places, to a much later date, it enjoyed a rare power and prestige. Traces of these are yet to be found in more than one familiar expression recalling the beliefs and ideas that took shape in the plains of Mesopotamia long before the palaces of Babylon and Nineveh were raised upon the banks of its two great rivers.

Astrology could not fail to smooth the way for astronomy, its successor. In order to profit by the indications of the stars, it was necessary to foresee the positions they would occupy in the sky on a given day or hour. There are many undertakings which succeed only when they are carefully matured. If some great risk is to be run, it is not of much use to receive the advice and warnings of the stars at the last moment, when the decisive step has, perhaps, been made, and no retreat is possible. It would then be too late to think about the chances of success, and a sudden withdrawal from an action already begun or an equally sudden acceptance of a task for which no sufficient preparation had been made, would be the too frequent result.

There was only one mode of escaping such a danger or embarrassment as this, and that was, first, to arrive by repeated observation at an exact knowledge of the route followed by the stars across the sky, and of the rapidity of their march; secondly, to distinguish them one from another, to know each by its own name, to recognize its physiognomy, character, and habits. The first duty of the astrologer was to prepare such an inventory, and to discover the principle of these movements; then, and then only, would he be in a position to give a satisfactory answer to one asking where any particular star would be at the end of any specified number of days, weeks, or months. Thanks to such information, his client could fix upon some happy conjunction of the heavenly bodies, or at least avoid a moment when their influence would be on the side of disaster. In every undertaking of any importance the most favourable hour could be selected long before by the

[1] "Chaldæi . . . . . diuturnâ observatione siderum scientiam putantur effecisse, ut prædeci posset quid cuique eventurum etquo quisque fato natus esset."—CICERO, *De Divinatione*, i. 1, 2.

person chiefly concerned, the hour in which his star would be in the best quarter of the sky and in the most propitious relations with its neighbours.

The phenomena produced in Chaldæa by these studies have been repeated more than once in the history of civilization ; they embody one of those surprises to which humanity owes much of its progress. The final object of all this patient research was never reached, because the relations upon which a belief in its feasibility was based were absolutely chimerical, but as a compensation, the accessory and preliminary knowledge, the mere means to a futile end, have been of incalculable value. Thus, in order to give an imposing and apparently solid basis to their astrological doctrines, the Chaldæans invented such a numeration as would permit really intricate computations to be made. By the aid of this system they sketched out all the great theories of astronomy at a very early age. In the course of a few centuries, they carried that science to a point never reached by the Egyptians.[1]

The chief difficulty in the way of a complete explanation of the Chaldæan system of arithmetic lies in the interpretation of the symbols which served it for ciphers, which is all the greater as it would seem that they had several different ways of writing a single number. In some cases the notation varied according to the purpose of the calculation. A mathematician used one system for his own studies, and another for documents which had to be read by the public. The doubts attending the question are gradually being resolved, however, by the combined efforts of Assyriologists and mathematicians. At the beginning of their civilization the Chaldæans did as other peoples have done when they have become dissatisfied with that mere rough opposition of unity to plurality which is enough for savage races, and have attempted to establish the series of numbers and to define their properties. "They also began by counting on their fingers, by *fives* and *tens*, or in other words by units of *five*; later on they adopted a notation by *sixes* and *twelves* as an improvement upon

[1] This has been clearly shown by Laplace in the *Précis de l'Histoire de l'Astronomie*, which forms the fifth book of his *Exposition du Système du Monde* (fifth edition). He gives a *résumé* of what he believes to have been the chief results obtained by the Chaldæan astronomers (pp. 12-14 in the separate issue of the *Précis* 1821, 8vo). It would now, perhaps, be possible, thanks to recent discoveries, to give more precise and circumstantial details than those of Laplace.

the primitive system, in which the chief element, the *ten*, could be divided neither into three nor four equal parts."[1] Two regular series were thus formed, one in units of six, the other in units of five. Their commonest terms were, of course, those that occur in both series. We know from the Greek writers that the Chaldæans counted time by *sosses* of sixty, by *ners* of 600, and by *sars* of 3,600, years, and these terms were not reserved for time, they were employed for all kinds of quantities. The *sosse* could be looked at either as *five twelves* or *six tens*. So, too, with the *ner* (600) which represents *six hundreds*, or a *sosse* of *tens*, or *ten sosses* or *fifty twelves*. The *sar* may be analysed in a similar fashion.

A system of numeration was thus established which may be looked at from a double point of view; in the first place from its *sexagesimal* base, which certainly adapts itself to various requirements with greater ease than any other;[2] in the second from the extreme facility with which not only addition, but all kinds of complex calculations may be made by its use.[3]

With but two symbols, one for the units, the other for the tens, every number could be expressed by attending to a rule of position like that governing our written numeration; at each step to the left, a single sign, the vertical *wedge*, increased sixty-fold in value; the tens were placed beside it, and a blank in this or that column answered to our zero.

Founded upon a sexagesimal numeration, the metrical system of Babylon and Nineveh was "the most scientific of all those known and practised by the ancients: until the elaboration of the French metrical system, it was the only one whose every part was scientifically co-ordinated, and of which the fundamental

[1] AURÈS, *Essai sur le Système métrique assyrien*, p. 10 (in the *Recueil de Travaux relatifs à la Philologie et à l'Archéologie égyptiennes et assyriennes*, vol. iii. Vieweg, 4to, 1881). We refer those who are interested in these questions to this excellent paper, of which but the first part has as yet been published (1882). All previous works upon the subject are there quoted and discussed.

[2] "Sixty may be divided by any divisor of ten or twelve. Of all numbers that could be chosen as an invariable denominator for fractions, it has most divisors."—Fr. LENORMANT, *Manuel d'Histoire ancienne*, vol. ii. p. 177, third edition.

[3] AURÈS, *Sur le Système métrique assyrien*, p. 16. A terra-cotta tablet, discovered in Lower Chaldæa among the ruins of Larsam, and believed with good reason to be very ancient, bears a list of the squares of the fractionary numbers between $\frac{1}{60}2$ and $\frac{60}{60}2$, or $\frac{1}{60}$, calculated with perfect accuracy (LENORMANT, *Manuel*, &c. vol. ii. p. 37). See also SAYCE, *Babylonian Augury by means of Geometrical Figures*, in the *Transactions of the Society of Biblical Archæology*, vol. iv. p. 302.

conception was the natural development of all measures of superficies, of capacity, or of weight, from one single unit of length, a conception which was adopted as a starting point by the French commission of weights and measures.

"The cubit of 525 millimetres was the base of the whole system.[1] We shall not here attempt to explain how the other measures—itinerary, agrarian, of capacity, of weight—were derived from the cubit; to call attention to the traces left in our nomenclature by the duodecimal or sexagesimal system of the Babylonians, even after the complete triumph of the decimal system, is sufficient for our purposes. It is used for instance in the division of the circle into degrees, minutes, and seconds, in the division of the year into months, and of the day into hours and their fractions.

This convenient, exact, and highly developed system of arithmetic and metrology enabled the Chaldæans to make good use of their observations, and to extract from them a connected astronomical doctrine. They began by registering the phenomena. They laid out a map of the heavens and recognized the difference between fixed stars and those movable bodies the Greeks called planets—among the latter they naturally included the sun and the moon, the most conspicuous of them all both in size and motion, whose courses were the first to be studied and described. The apparent march of the sun through the crowded ranks of the celestial army was defined, and its successive stages marked by those twelve constellations which are still called the *Signs of the Zodiac*. In time even these observations were excelled, and it now appears certain that the Chaldæans recognized the annual displacement of the equinoctial point upon the ecliptic, a discovery that is generally attributed to the Greek astronomers. But, like Hipparchus, they made faults of calculation in consequence of the defects of their instruments.[2]

It was the same with the moon. They succeeded in determining its mean daily movements, and when they had established a period of two hundred and twenty-three lunations, they contrived to foretell its eclipses. Eclipses of the sun presented greater difficulties, and the Chaldæans were content with noting their occurrence. They were acquainted with the solar year of three hundred and sixty-five days and a quarter; they used it in their astronomical calculations; but their religious and civil year was

[1] Lenormant, *Manuel*, &c. vol. ii. p. 177, third edition. [2] *Ibid.* p. 37.

one composed of twelve lunar months, alternately full and short, that is, of twenty-nine and thirty days respectively. The lunar and solar years were brought into agreement by an intercalary cycle of eight years.[1]

The assertion of the philosopher Simplicius has been called in question for very plausible reasons. Simplicius declares, upon the faith of Porphyrius, that Callisthenes sent from Babylon to his uncle Aristotle, a copy of Chaldæan observations dating back as far as 1903 years before the entry of Alexander into Mesopotamia, that is, to more than twenty-two centuries before our era.[2]

However this may be, all ancient writers are agreed in admitting that the Chaldæans had begun to observe and record astronomical phenomena long before the Egyptians;[3] moreover the remains of those clay tablets have been found in various parts of Chaldæa and Assyria upon which, as Pliny tells us upon the authority of the Greek astronomer Epigenes, the Chaldæans had inscribed and preserved the astronomical observations of seven hundred and eighty thousand years.[4] We need not dwell upon the enormity of this figure; it matters little whether it is due to the mistakes of a copyist or to the vanity of the Chaldæans, and the too ready credulity of the Greeks; the important point is the

[1] LENORMANT, *Manuel*, vol. ii. pp. 175, 178, 180. G. SMITH, *Assyrian Discoveries* (London, 1876, 8vo), pp. 451, 452. RAWLINSON, *Ancient Monarchies*, vol. i. pp. 100, 101, fourth edition. We know that the *Astronomical Canon* of Ptolemy begins with the accession of a king of Babylon named Nabonassar, in 747 B.C. M. Fr. LENORMANT thinks that the date in question was chosen by the Alexandrian philosopher because it coincided with the substitution, by that prince, of the solar for the lunar year. Astronomical observations would thus have become much easier to use, while those registered under the ancient system could only be employed after long and difficult calculations. A reason is thus given for Ptolemy's contentment with so comparatively modern a date. (*Essai sur les Fragments cosmogoniques de Bérose*, pp. 192-197.)

[2] See the paper by M. T. H. MARTIN, of Rennes, *Sur les Observations astronomiques envoyées, dit on, de Babylone en Grèce par Callisthène*, Paris, 1863.

[3] The texts to this effect will be found collected in the essay of M. Martin. We shall be content here with quoting a phrase from Cicero which expresses the general opinion: "Chaldæi cognitione siderum solertiaque ingeniorum antecellunt." *De Divinatione*, i. 41.

[4] PLINY, *Natural History*, vii. 57, 3. The manuscripts give 720, but the whole context proves that figure to be far too low, neither does it accord with the writer's thought, or with the other statements which he brings together with the aim of showing that the invention of letters may be traced to a very remote epoch. The copyists have certainly omitted an M after the DCCXX. Sillig, following Perizonius has introduced this correction into his text.

existence of the astronomical tablets, and those Epigenes himself saw. The library of Assurbanipal at Nineveh included catalogues of stellary and planetary observations, among others the times of Venus, Jupiter and Mars, and the phases of the moon, for every day in the month.[1] Tablets have also been recently discovered giving the arrangement of the stars in the sky for each season and explaining the rule to be followed in the insertion of the intercalary months. Finally, a fragment of an Assyrian planisphere has been found in the palace of Sennacherib.[2]

Even if classic authors had been silent on the subject, and all the original documents had disappeared, we might have divined from the appearance of the figured monuments alone, how greatly the Chaldæans honoured the stars and how much study and research they devoted to them; we might have guessed that they lived with their eyes fixed upon the firmament and upon the sources of light. Look at the steles that bear royal effigies, at the representations upon contracts and other documents of that kind (see Fig. 10), at the cylindrical or conical seals which have gravitated in thousands into our museums (Figs. 11 and 12); you will see a personage adoring a star, still oftener you will find the sun's disk and the crescent moon figured upon the field, with, perhaps, one or several stars. These images are only omitted upon reliefs that are purely narrative and historical, like most of those in the Assyrian palaces. Everywhere else, upon every object and in every scene having a religious and sacred character, a place is reserved for the symbols in question, if we may call them so. Their presence is evidence of the homage rendered by the Chaldæans to the stars, and of the faith they placed in their supposed revelations. Further evidence to the same effect is given by the ancient writing, in which the ideogram for *king* was a star.

"The imaginations of the Egyptians were mainly impressed by the daily and annual circlings of the sun. In that body they saw the most imposing manifestation of the Deity and the clearest exemplification of the laws that govern the world; to it, therefore they turned for their personifications of the divine power."[3] The attention of the Chaldæans, on the other hand, was not so absorbed, and, so to speak, lost, in the contemplation of a single star,

[1] LENORMANT, *Manuel*, &c. vol. ii. p. 175.
[2] G. SMITH, *Assyrian Discoveries*, p. 407.
[3] LENORMANT, *Manuel*, &c. vol. ii. p. 181.

superior though it was to all others in its power for good or ill, and in its incomparable splendour. They watched the sky with a curiosity too lively and too intelligent to permit of a willing sacrifice of all the stars to one. *Samas*, the sun, and *Sin*,

FIG. 10.—Stone of Merodach-Baladan I. (Smith's *Assyrian Discoveries*).

the moon-god, played an important *rôle* in their religion and theology, but it does not appear that the gods of the other five planets were inferior to them in rank. If we accept the parallels established by the Greeks and Romans, these were *Adar* (Saturn), *Merodach* (Jupiter), *Nergal* (Mars), *Istar* (Venus), and *Nebo* (Mercury).

The chief atmospheric phenomena were also personified; of this we may give one example. All travellers in Chaldæa agree in their descriptions of those sudden storms which burst on the country from a clear sky, especially towards the commencement of summer. Without a single premonitory symptom, a huge, black water-spout advances from some point on the horizon, its flanks

FIG. 11.—Assyrian Cylinder, in the National Library, Paris. Jasper.

shooting lightnings and thunder. In a few minutes it reaches the traveller and wraps him in its black vapours; the sand-laden wind blinds him, the rain pours upon him in solid sheets; but he has hardly realized his position before the storm is past and the sun is again shining in the blue depths above. But for torn and overthrown tents and trees uprooted or struck by the electric

FIG. 12.—Assyrian Cylinder, in the National Library, Paris. Serpentine.

fluid, a stranger to the country might almost believe himself to have been the sport of a dream.[1]

The force and suddenness of these visitations could hardly fail to impress the imagination of a people exposed to them, and it is not surprising that Mesopotamia had its god of storms and

[1] LAYARD, *Nineveh and its Remains*, vol. i. p. 124. These storms hardly last an hour.

thunder. He, Raman, it is, perhaps, who is figured in the bas-relief from Nimroud reproduced below (Figs. 13 and 14),[1] in which a god appears bearing an axe in his right hand, and, in his left, a kind of faggot, whose significance might have escaped us but for the light thrown upon it by classic sculpture. The latter no doubt borrowed a well-known form from the east, and the object in question is nothing less than the thunderbolt given by Greek artists to their Zeus.

It was this adoration of the stars and planets that led by degrees to what we call polytheism. Man partitioned those terrible

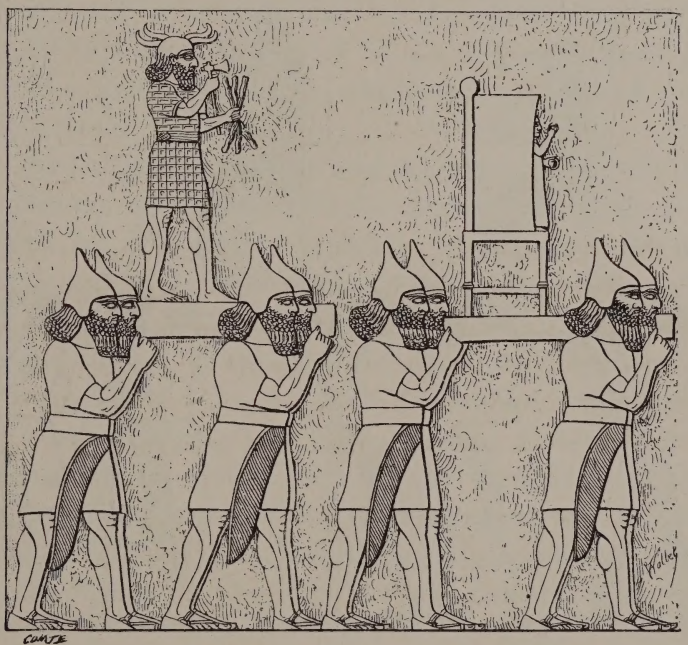


FIG. 13.—Gods carried in procession; from Layard's *Monuments of Nineveh*, first series, pl. 65.

powers of nature of which he felt himself the sport, between a vast number of agents, between crowds of genii upon whose mercies he thought himself dependent, and whom he did his best to propitiate by gifts and to compel by magic. Little by little, intelligence perfected that work of abstraction and simplification by which all races but those who have stuck fast in the conceptions of their infancy have arrived at a single conclusion. Without ceasing to believe in the existence of genii, they invented the gods, a race of beings far more powerful, not only than short-lived man, but even than the

[1] Some Assyriologists believe this to represent Merodach.

confused army of demons, of those beings who enjoyed the control of not a few of the mysterious agencies whose apparent conflict and final accord are the causes of the life, movement, and equilibrium of the world.

When the intellect had arrived at this doctrine, calmness and serenity fell upon it. Each deity became a person with certain well-defined powers and attributes, a person who could not escape the apprehension and the appeals of mankind with the facility of the changing and fantastic crowd of demons. His dwelling-place could be pointed out to the faithful, whether it were in his own

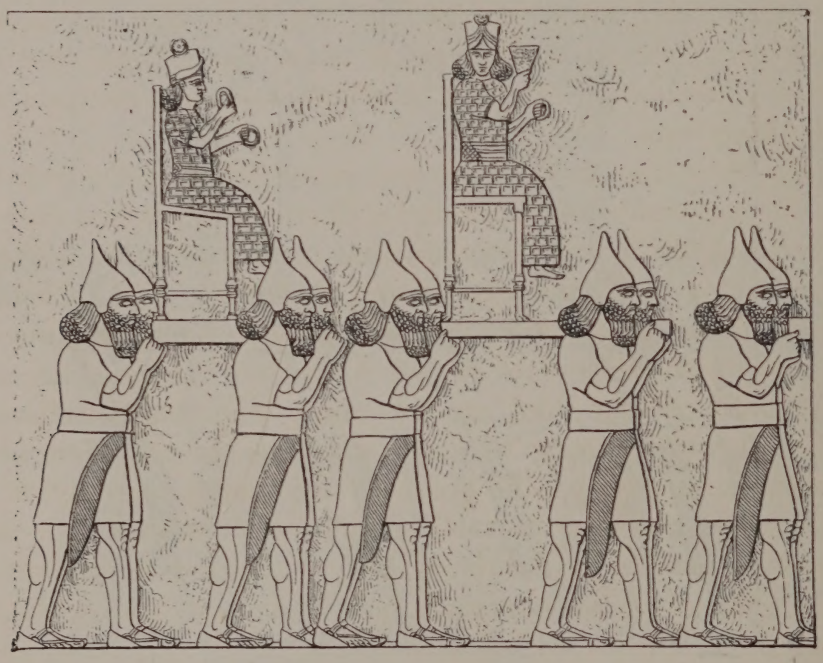


Fig. 14 —Gods carried in procession; from Layard's *Monuments of Nineveh*, first series, pl. 65.

peculiar star, among the eternal snows upon the summits of the distant mountains, or near at hand, in the temple built for him by his worshippers. Such a deity could be approached like a sovereign whose honour and interest are bound up with his word. So long as by prayer, and still more by sacrifices, the conditions were observed on the suppliant's side, the god, invisible though he was, would do his duty and protect those with whom he had entered into an unwritten contract.

But in order to establish this mutual relationship between gods and men, it was necessary that the former should be brought

within reach of the latter. With the development of the religious sentiment and of definite and clear ideas as to the gods, the plastic faculty was called upon for greater efforts than it had before made.

Something beside grimacing and monstrous images of genii was asked from it. Figures were demanded which should embody something of the nobility and majesty attributed to the eternal masters of the world. The divine effigy was the incarnation of the deity, was one of the forms in which he manifested himself, it was, as the Egyptians would say, one of his *doubles*. Such an effigy was required to afford a worthy frame for the supreme dignity of the god, and the house built by man's hands in which he condescended to dwell had to be such that its superior magnificence should distinguish it at a glance from the comparatively humble dwellings in which mortals passed their short and fugitive lives.

It was thus that the temples and statues of the gods took form when the various deities began to be clearly distinguished from one another, and, by a process of mental condensation, to acquire a certain amount of consistence and solidity. The Chaldæan temples, unlike those of Egypt and Greece, have succumbed to time, and the ancient texts in which they are described are short and obscure. Their ruins are little more than shapeless heaps of *débris*. In endeavouring to arrive at a clear understanding of the Chaldæan notions as to the gods, we are unable to study, as we did elsewhere, the forms of their religious edifices, with their plans, dimensions, and the instructive variety of decorative symbols and figures with which the sanctuary and its dependencies were overspread.

On the other hand a sufficient number of figures of the gods have come down to us. They abound upon small objects, such as cylinders, engraved stones, cones, scarabæi, the bezels of rings, terra-cotta tablets and statuettes. They are also found, though less frequently, among the *débris* of monumental sculpture, in the bas-reliefs of the Ninevite palaces, and even among certain figures in the round which have been recovered from the ruins of these latter buildings. We can therefore easily find out the particular attributes given by the artist as the interpreter of the national beliefs to those gods whose visible bodies it was his office to create; we can see what choice and combination of forms he thought best fitted to solve the problem presented to him. But as

yet we are not in a position to put a name to each even of the figures that recur most frequently. In the case of Egypt there is no such difficulty: when we encounter the image of one of her gods upon the walls of a temple or in the cases of a museum, we can say without hesitation, "This is Osiris or Ptah," as the case may be, "Amen or Horus, Isis, Sekhet, or Hathor." It is not so with Chaldæa. Figures are there often found uninscribed, and even when an inscription is present it not seldom offers difficulties of interpretation which have not yet been cleared up; for the divine names are usually ideograms. Only a few have been identified beyond all doubt, those namely of which we have Hebrew or Greek transcriptions, preserving for us the real Chaldæan original; Ilou, Bel, Nisroch, Beltis, Istar, are examples of this. Hence it results that Assyriologists often feel no little embarrassment when they are asked to point out upon the monuments the figures even of those gods of whose names they are the least doubtful. The Assyrians and Chaldæans, like other nations of antiquity, had what we should now call their *figured mythology*, but we are still imperfectly acquainted with it. Even for those whom we may call the most exalted personages of the Chaldæan Olympus, scholars have hardly succeeded in illustrating the texts by the monuments and explaining the monuments by the texts; and we are yet far from being able to institute a perpetual and standard comparison as we have done in the case of Egypt and still more in that of Greece, between the divine types as they appear in religious formulæ and in the national poetry, and the same types when embodied by the imagination of the artist.

A long time may elapse before a mythological gallery for Chaldæa, in which all the important members of the Mesopotamian pantheon shall take their places and be known by the names they bore in their own day, can be formed, but even now the principles upon which they were represented by art may be stated. The images of the various gods were built up in great part by the aid of combinations similar to those made use of in realizing the minor demons. A natural bent towards such a method of interpretation was perhaps inherited from the days in which the *naïve* adoration of all those animals which help or hurt mankind formed a part of the national worship; again, certain animals were, by their shapes and constitution, better fitted than others to personify this or that quality which, in its fulness, was considered

divine. It was natural, therefore, that the artist should, in those early days, have indicated the powers of a deity by forms borrowed from the strongest, the most beautiful, or the most formidable of animals. Nothing could suggest the instantaneous swiftness of a god better than the spreading wings of an eagle or vulture, or his destructive and irresistible power better than their beaks and talons, the horns and dewlap of the bull, or the mane and claws of the lion.

The sculptor had, therefore, a good reason for employing these forms and many others offered to him by the fauna of the regions he inhabited. He introduced them into his work with skill and decision, and obtained composite types by their aid which we may compare to those of Egypt. But there were some differences which deserve to be remembered. The human face received more consideration from the Mesopotamian sculptors than from those of Egypt. Except in the sphinxes and in two or three less important types the Egyptians, as our readers will remember, crowned a human body with the head of a snake, a lion, or a crocodile, an ibis or a hawk, and sometimes of a clumsy beast like the hippopotamus,[1] and their figures are dominated and characterized by the heads thus given to them. At Babylon and Nineveh the case is reversed. Animals' heads are only found, as a rule, upon the shoulders of those figures which are looked upon by common consent as genii rather than gods. In the latter a contrary arrangement prevails. They may have, like Dagon, a fish's tail hanging down their backs, or, like the colossal guardians of the king's palace, the body and limbs of a lion or bull with the wings of an eagle, but the head is that of a man and the sculptor has given it all the beauty he could compass. To this, we believe, there is but one exception—the eagle-headed god to whom Assyriologists have assigned the name of Nisroch. He seems to have occupied a high place among the Mesopotamian divinities (Fig. 8).

But the difference between the two systems does not end here. There are a few deities, such as Ptah, Osiris, and Amen, to whom the Egyptians gave a human form in its simple entirety; but even in such cases it was not reproduced in its native elegance and nobility. The extremities of Ptah and Osiris were enveloped in a kind of sheath, which made their figures look more like mummies

[1] *History of Art in Ancient Egypt*, vol. i. pp. 56, 57, and figs. 39-45.

than beings with the power of life and motion. It was not so in Chaldæa, as we shall see if we examine the procedure of the Mesopotamian artist when he had to figure the greater gods, those in whom the highest efforts of mental abstraction found concrete expression. Take, for instance, Nebo, the god of intelligence and prophecy, and Istar, the personification of the earth's fertility, of its power of creation and destruction and its inexhaustible energy. Nebo stands upright, his head covered with a horned tiara: his ample beard is gathered into three rows of close curls: he wears a long robe falling straight to the ground (Fig. 16). As for Istar, she is a young woman, nude, large-hipped, and pressing her breasts with her hands (Fig. 15). The awkwardness and rudeness which to some extent characterizes these figures is due to the inexperience of the artist; his intentions were good, but his skill was hardly equal to giving them full effect. His Nebo was meant to be as majestic as a king or high priest; his Istar is the spouse, the mother, the nurse; she is the goddess "who," as the inscriptions say,[1] "rejoices mankind," who, when fertilized by love, assures the duration and perpetuity of the species. It was this method of interpretation that was in later years to lead to those great creations of Greek art whose beauty is still the wonder of mankind. Between these Chaldæan figures and those of the Greek sculptors the difference was one of degree. The anthropomorphism of the Chaldees was franker than that of the Egyptians, and so far the art of Chaldæa was an advance upon that of Egypt, although it was excelled by the latter in executive qualities. The method to which it had committed itself, the diligent and passionate study of the human figure, was the royal road to all excellence in the plastic arts.

But our present business is to discover this people's real conceptions of its gods and to get a clear idea of their characteristic qualities. We shall not attempt, therefore, to show how most of them belonged to one of those divine triads which are to be found, it is believed, in Chaldæa as well as in Egypt: we shall not ask how these triads were subordinated, first, one to another, and secondly, to a single supreme being, who, in Mesopotamia as elsewhere, was in time perceived more or less clearly and placed at the head of the divine hierarchy. These triads are nearly always

[1] Rawlinson, *The Five Great Monarchies*, &c. vol. i. p. 139.

FIG. 15.—Statue of Nebo; from Nimroud. British Museum. Calcareous stone. Height 6 feet 5 inches.

found in polytheistic religions, and that for sufficiently obvious reasons.

The most simple relationship offered by the organic world to the mind of man is the relationship of the sexes, their contrast, and the necessity for their union. Wherever religious conceptions spring up gods and goddesses are created together. All the forces divined by human intelligence are doubled into two persons, closely united, the one the complement of the other. The one has the active, the other the passive *rôle*. Egypt, Chaldæa, Greece, all had these divine couples; Apsou, or, as Damascius calls him, Apason and Tauthé; Anou and Antou, the Anaïtis of the Greek writers; Bel and Belit, or Beltu, perhaps the Greek Mylitta; Samas, the sun, and Allat, the queen of the dead; Merodach (or Marduk) and Zarpanit, a goddess mother who protected unborn infants and presided at births; Nabou and Nana; Assur and Istar; Dumouzi and Istar. Precise details as to the status of these divinities are still wanting. Several among them seem to have been at one time endowed with a distinct individuality, and at other periods to have been almost indistinguishable from some other deity. They were without the distinct features and attributes of the inhabitants of Olympus, but we are left in no doubt as to the binary divisions of which we have been speaking.

FIG. 16.—Terra-cotta Statuette; from Heuzey's *Figurines antiques du Musée du Louvre.*

The attraction of desire and the union of the sexes leads to the birth of the child; with the appearance of the latter the family is complete, and, with it, the type upon which the triple classification of the gods was founded. But even when we attempt to trace the composition of a single group and to assign his proper place to each of its members, the embarrassment is great. We find a single god sometimes filling, to all appearance, the *rôle* of husband and father, and sometimes that of the son; or a single goddess acting at different times as the wife and daughter of one and the same god. Some of these apparent contradictions must be referred to the want of certainty in our interpretation of the

inscriptions, some to the floating quality of the conceptions to which they relate. It may never, perhaps, be possible to make out a complete list, or one which shall not be obnoxious to criticism on other grounds; moreover, the historian of art has no need to enter into any such discussion, or to give the details of a nomenclature as to which Assyriologists themselves have many doubts. It suffices that he should point out the multiplicity of couples and triads, the extreme diversity of deities, and thus indicate a reason for the very peculiar aspect of the cylinders and engraved stones of Chaldæa, for the complex forms of the gods, and for the multitude of varied symbols which encumber the fields of her sculptured reliefs. Some of the figures that crowd these narrow surfaces are so fantastic that they astonish the eye as much as they pique the curiosity (see Fig. 17).

Fig. 17.—A Chaldæan Cylinder; from Ménant's *La Bible et les Cylindres Chaldéens.*

The number of divine types and the consequent difficulties of classification are increased, as in Egypt, by the fact that every important town had its local deities, deities who were its own peculiar gods. In the course of so many centuries and so many successive displacements of the political centre of gravity, the order of precedence of the Mesopotamian gods was often changed. The dominant city promoted its own gods over the heads of their fellows and modified for a time which might be long or short, the comparative importance of the Chaldæan divinities. Sin, the moon god, headed the list during the supremacy of Ur, Samas during that of Larsam. With the rise of Assyria its national god, Assur, doubtless a supreme god of the heavens, acquired an uncontested pre-eminence. It was in his name that the Assyrians subdued all Asia and shed such torrents of blood. Their wars were the wars of Assur; they were undertaken to extend his

empire and to glorify his name. Hence the extreme rigour, the hideous cruelty, of the punishments inflicted by the king on his rebellious subjects; he was punishing heretics and apostates.[1]

In the religious effusions of Mesopotamia, we sometimes find an accent of exalted piety recalling the tone of the Hebrew scriptures; but it does not appear that the monotheistic idea towards which they were ever tending, but without actually reaching it and becoming penetrated by its truth, had ever acquired sufficient consistence to stimulate the Chaldæan artist to the creation of a type superior in beauty and nobility to those of gods in the second rank. The fact that the idea did exist is to be inferred from the use of certain terms rather than from any mention of it in theological forms or embodiment in the plastic arts.

At Nineveh, Assur was certainly looked upon as the greatest of the gods, if not as the only god. Idols captured from conquered nations were sometimes restored to their worshippers, but not before they had been engraved with the words, "*To the glory of Assur.*" Assur was always placed at the head of the divine lists. He is thought to be descended from Anou or Sin; but he was raised to such a height by his adoption as the national deity, that it became impossible to trace in him the distinguishing characteristics of his primary condition as a god of nature; he became, like the Jehovah of the Israelites, a god superior to nature. His attributes were of a very general kind, and were all more or less derived from his dignity as chief leader and father, as master of legions and as president in the assemblies of the gods. He was regarded as the supreme arbiter, as the granter of victory and of the spoils of victory, as the god of justice, as the terror of evil doers and the protector of the just. The great god of the Assyrians was, of course, the god of battles, the director of armies, and in that capacity the spouse of Istar, who was no less warlike than himself. His name was often used, in the plural, to signify the gods in general, as that of Istar was used for the goddesses. No myth has come down to us in which he plays the principal part, a fact which is to be accounted for by his comparatively late arrival at a position of abstract supremacy.[2]

[1] TIELE, *Histoire comparée des anciennes Religions de l'Égypte et des Peuples Sémitiques*, translated by Collins, p. 222. The first volume of an English translation, by James Ballingal, has been published in Trübner's Oriental Series.—ED.

[2] *Ibid.*, p. 224.

In the Babylon of the second Chaldee empire there was, it would seem, a double embodiment of the divine superiority, in Merodach, the warrior god, the god of royalty, and Nebo the god of science and inspiration. In Chaldæa the power of the priests and learned men did not yield before that of the monarch. And yet a certain latent and instinctive monotheism may be traced in its complex religion. There were, indeed, many gods, but one was raised above all the others, and, whether they turned to Merodach or Nebo, the kings loved to style themselves the worshippers of the "Lord of Lords," *Bel Beli*.[1]

Like Assur at Nineveh, this supreme deity was sometimes called, by abbreviation, *Ilou*, or god, a term which was employed, with slight variants, by every nation speaking a Semitic tongue.[2]

But in spite of their aspirations and the august *rôle* assigned to their Merodach, their Nebo, and their Assur, Chaldæa and Assyria succeeded no better than Egypt in giving a fit embodiment to the sovereign moderator of the universe, to the king and common parent of gods and men. Their art was without the skill and power required for the creation of an image which should be worthy of the mental idea. Neither the temples of Nineveh nor those of Babylon had an Olympian Jove.

Assur came nearer to the acquisition of a supreme and unique godhead than any of his rivals, but we do not know with any certainty what features were his in plastic representations. Some have recognized him in a group which often occurs on the historic bas-reliefs and cylinders, here floating over a field of battle, there introduced into some scene of adoration. You are at once struck by the similarity of the group in question to one of the commonest of Egyptian symbols—the winged globe on the cornice of almost every temple in the Nile valley. Long before they had penetrated as conquerors to Thebes and Memphis, the Assyrians may have found this motive repeated a thousand times upon the ivories, the jewels, the various objects of luxury which Phœnician merchants carried from the ports of the Delta to distribute over every neighbouring country.[3]

[1] Tiele, *Histoire*, &c. p. 237.

[2] Hence the name Babylon, which has been handed down to us, slightly modified, by classic tradition. The true Chaldæan form is *Bab-Ilou*, literally "The Gate of God."

[3] *History of Art in Ancient Egypt*, vol. ii. pp. 399-400 and figs. 311-313.

The Assyrians appropriated the emblem in question, sometimes with hardly a modification upon its Egyptian form (Fig. 18), but more often with an alteration of some significance. In the centre of the symbol and between the outspread wings, appears a ring,

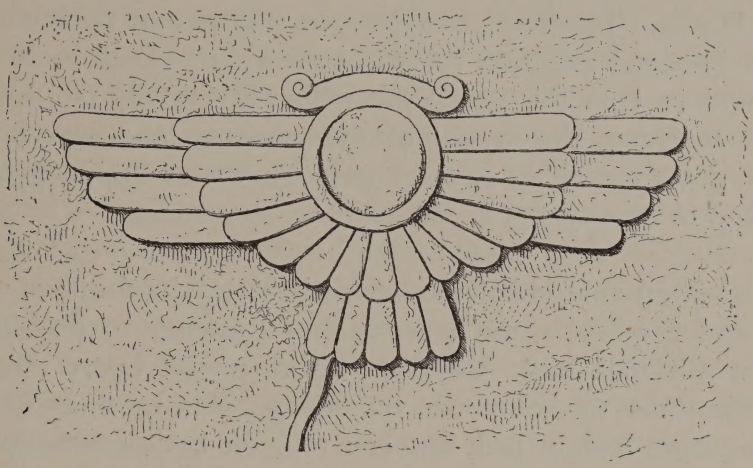


FIG. 18.—The winged globe ; from Layard.

and, within it, the figure of a man draped in flowing robes and covered with a tiara. He is upright, in some cases his right hand is raised as if in prayer, while his left grasps a strong bow (Fig. 19) ; in others he is stretching his bow and about to launch a triple-headed arrow, which can be nothing but a thunderbolt.

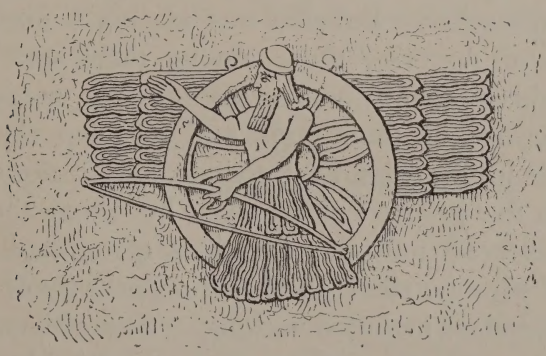


FIG. 19.—The winged globe with human figure ; from Layard.

The meaning attached to this plastic group by the Assyrians is made clear to us by the important place it held in the religious imagery of the Aryans of Media and Persia. These people, the last born of the ancient Asiatic world, borrowed nearly the whole of

their artistic motives from their predecessors ; they only modified their significance when the difference between their religious notions and those of the inventors required it. Now, we find this symbol upon the rocks of Behistan and Persepolis, where, according to texts the meaning of which is beyond a doubt, it represents Ahura-Mazda. The name has changed, but we may fairly conclude that the idea and intention remained the same. Both in Mesopotamia and in Iran this group was meant to embody the notion of a supreme being, the master of the universe, the clement and faithful protector of the chosen race by whom his images were multiplied to infinity.

In this rapid analysis of the beliefs held by the dwellers on the Tigris and Euphrates, we have made no attempt to discriminate between Chaldæa and Assyria. To one who looks rather to similarities than to differences, the two peoples, brothers in blood and language, had, in fact, but one religion between them. We possess several lists of the Assyrian gods and goddesses, and when we compare them we find that they differ one from the other both in the names and numbers of the deities inscribed upon them; but, with the exception of Assur, they contain no name which does not also belong to Chaldæa. Nothing could be more natural. Chaldæa was the mother-country of the Assyrians, and the intimate relations between the two never ceased for a day. Even when their enmity was most embittered they could not dispense the one with the other. Babylon was always a kind of holy city for the kings of Assyria; those among them who chastised the rebellious Chaldæans with the greatest severity, made it a point of honour to sacrifice to their gods and to keep their temples in repair. It was in Babylon, at Borsippa, and in the old cities near the coast, that the priests chiefly dwelt by whom the early myths had been preserved and the doctrines elaborated to which the inhabitants of Mesopotamia owed the superiority of their civilization. The Assyrians invented nothing. Assur himself seems only to have been a secondary form of some Chaldæan divinity, a parvenu carried to the highest place by the energy and good fortune of the warlike people whose patron he was, and maintained there until the final destruction of their capital city. When Nineveh fell, Assur fell with her, while those gods who were worshipped in common by the people of the north and those of the

south long preserved their names, their fame, and the sanctity of their altars.

The religion of Nineveh differed from that of Babylon, however, in minor particulars, to which attention has already been called.[1] A single system of theology is differently understood by men whose manner and intellectual bent are distinct. Rites seem to have been more voluptuous and sensual at Babylon than at Nineveh; it was at the former city that Herodotus saw those religious prostitutions that astonished him by their immorality.[2] The Assyrian tendency to monotheism provoked a kind of fanaticism of which no trace is to be found in Chaldæa. The Ninevite conquerors set themselves to extend the worship of their great national god; they sacrificed by hecatombs the presumptuous enemies who blasphemed the name of Assur. The sacrifice of chastity was in favour at Babylon, that of life seemed to the Assyrians a more effectual offering. A soldier people, they were hardened by the strife of centuries, by the perpetual hardships of the battlefield, by the never-ending conflicts in which they took delight. Their religious conceptions were, therefore, narrower and more stern, their rites more cruel than those of their southern neighbours. The civilization of Babylon was more refined, men gave themselves more leisure for thought and enjoyment; their manners were less rude, their ideas less rigid and conservative; they were more inclined towards intellectual analysis and speculation. So that when we find traces of the beliefs and useful arts of Mesopotamia on the coasts, and even among the isles, of the Ægæan, the honour of them must be given to Babylon rather than to Nineveh.

§ 7.—*The People and Government.*

WE have already explained how it is that the religions of Chaldæa and Assyria are less well known to us than that of Egypt; the insufficiency of our knowledge of the political and social organization of the two kingdoms is to be explained by the same reasons. The inscriptions, prolix enough on some subjects, hardly touch on others that would be much more interesting, and, moreover, their interpretation is full of difficulty. The Greek travellers knew nothing of Nineveh, while their visits to Babylon

[1] TIELE, *Manuel*, &c. pp. 77, 78.

[2] HERODOTUS, i. 99.

were paid in its years of decadence. They seem to have been chiefly struck with the sort of sacerdotal caste to which they gave the name of Χαλδαῖοι.

The origin of this priestly corps has been much discussed. Some see in it the descendants and heirs of the primitive population, of those whom they believe to have been Turanians; others believe them to have been Semitic immigrants, coming from the north and bringing with them arts and doctrines of which they constituted themselves the guardians and expounders in the new country. We are hardly qualified to take part in the controversy. It is certain, on the one hand, that the influence of these quasi-clergy began to make itself felt at a remote period in the national history, and, on the other, that they had become, like the population that bowed before them, Semitic both in race and language at a very early date. The idiom employed by the Chaldæans belongs to the same family of languages as Arabic, Hebrew, and Aramæan; their gods are to be found, with slight modifications of name and attributes, from Yemen in the south to the north of Syria and as far west as the table-land of Cappadocia.

It is, no doubt, upon the authority of Ctesias, his favourite guide in matters of oriental history, that Diodorus talks of the *Chaldæans*. Ctesias may have seen them at Babylon, in the exercise of their functions, in the time of Artaxerxes Mnemon. "The Chaldæans," writes the historian, "are the most ancient Babylonians .... (and) hold the same station and dignity in the commonwealth as the Egyptian priests do in Egypt; for, being deputed to divine offices, they spend all their time in the study of philosophy, and are especially famous for the art of astrology. They are mightily given to divination, and foretell future events, and employ themselves either by purifications, sacrifices, or other enchantments to avert evils, or procure good fortune and success. They are skilful, likewise, in the art of divination by the flying of birds, and interpreting of dreams and prodigies; and are reputed as the oracles (in declaring what will come to pass) by their exact and diligent viewing of the entrails of the sacrifices. But they attain not to this knowledge in the same manner as the Greeks; for the Chaldæans learn it by tradition from their ancestors, the son from the father, who are all in the meantime free from all other public offices and attendances; and because their parents are their tutors, they both

learn everything without envy, and rely with more confidence upon the truth of what is taught them; and being trained up in this learning from their very childhood, they become most famous philosophers, being at the age most capable of learning."[1]

Centuries were required for the growth of such a corporation and for the firm establishment of its power upon a well-knit system of rites and doctrines. The institutions described by Ctesias would hardly show any sensible change from those in force in the same country before the Persian conquests. In their double character of priests and astrologers the Chaldæans would enjoy an almost boundless influence over both kings and private individuals; the general belief in their powers of divination made them in a sense the masters and arbiters of every destiny. Under the national kings "members of their caste led the national armies and occupied all the chief posts in the kingdom. The royal houses that succeeded one another at Babylon sprang from their ranks both in the days of vassalage to Assyria and in those of full independence. Their hierarchy was headed by an archimagus; we do not know his title in the national language, but we do know that, after the king, he was the chief person in the empire. He accompanied the sovereign wherever he went, even to the wars, in order to regulate his actions according to the rules of his art and the indications of the heavens. When the king died and his successor was not on the spot to assume the reins of government, the archimagus was regent during the interregnum, as, for instance, between the death of Nabopolassar and the accession of Nebuchadnezzar.[2]

The almost theocratic character of this régime had both its advantages and its inconveniences. These priests were the savants of their time. The honours that were paid to them must have had their effect in stimulating intellectual culture and material well being, but, on the other hand, the constant intervention of a sacerdotal body in public affairs could not but do something to enfeeble the military spirit and the energy and responsibility of the commanders. Not that the priests were less penetrated by the national sentiment than their fellow countrymen. Proud of their ancient traditions and of the superiority of their science, they added contempt to the detestation they felt for a foreign master, whether he came from Babylon or Susa. The priests were the

[1] DIODORUS, ii. 29.

[2] Fr. LENORMANT, *Manuel de l'Histoire ancienne de l'Orient*, vol. ii. p. 252.

ringleaders in those risings against Assyria, and, in later years, against Persia, which cost Babylon so dearly. Once only was the success they promised achieved, and that was in the time of Nabopolassar, when Nineveh was exhausted by its long succession of wars and victories. On every other occasion the upper hand remained with races less instructed, indeed, and less refined, but among whom the power concentrated in the hands of the sovereign had been utilized to drive all the vital forces of the kingdom into the practice of war and preparation for it.

On the other hand, Babylon enjoyed certain elements of prosperity and guarantees of a long national existence which were wanting to those rivals under whose yoke she had more than once to pass. The ruling classes in Chaldæa were quicker in intellect and far better educated than elsewhere. Their country lent itself to a wide and well-organised system of cultivation better than the hilly districts of Assyria or the narrow valleys and sterile plains of Iran. Communication was more prompt and easy than among the terraces which rise one above another from the left bank of the Euphrates up to the high lands of Persia and Media: in order to pass from one of these terraces to another, the bare rock has to be climbed in a fashion that brings no little danger to the traveller and his patient beasts of burden.[1] In Chaldæa, on the other hand, the proximity of the two rivers to each other, and the perfect horizontality of the soil, make the work of irrigation very easy. The agriculturists were not exposed to the danger of a complete failure of crops, a misfortune which overtook the upper regions of Mesopotamia often enough. There the Euphrates and Tigris are wide apart, and the land between them is far from being a dead level. Many districts had to depend almost entirely upon the rainfall for irrigation. Again, when it was a question of journeying from one city to another or transporting the produce of the fields, the Chaldæan could choose between the land routes that lay along the banks of the canals, or the waterways that intersected each other over the whole surface of the country. In these days the journey between Bagdad and Bassorah, a distance of some three hundred miles, involves a long detour to the east along the foot of the mountains, in order to avoid impassable marshes and bands of

[1] Loftus, *Travels and Researches in Chaldæa and Susiana*, p. 309. The Greeks gave the appropriate name of κλίμακες to those stepped roads that lead from the valley and the sea coast to the high plains of Persia.

wandering Arabs devoted to murder and pillage. The flat country is infested with mounted brigands who strip unprotected travellers, but in ancient times it swarmed with traffic, every road was encumbered with the movements of merchandise and the march of caravans, the fields were crossed in every direction by canals, and the tall sails of the boats that moved between their banks rose over the waving crops as they do to-day in the deltas of the Meuse and the Rhine, for Chaldæa was a southern Holland.

The incomparable situation of Babylon was sure to lead to great industrial and commercial activity in spite of any shortcomings in her rulers. She stood in the centre of a marvellously fertile region, between upper and western Asia. Two great rivers were at her doors, bringing her, without cost or effort, the products of their upper basins, while, on the other hand, they placed her in easy communication with the Persian Gulf and the Indian Ocean. The merchants of Babylon had communication with the people of the Levant by easy and well-worn roads crossing the fords of the middle Euphrates. Less direct roads farther to the north were used nearly as much. Some of these traversed the Cilician passes, crossed the Amanus and Taurus into the plateau of Asia Minor, and ended at the coasts of the Ægæan and the Euxine; others passed through Assyria into Media, and through the Caspian passes up to the central plateau of Asia and into distant Bactria, whence easy passes led down into the upper valley of the Indus. Babylon was thus an *entrepôt* for caravans both from the east and west, and for navigators coming from the ports of Africa, Arabia, and India.

There are, if we may use the expression, natural capitals and capitals that are artificial. The sites of the first are determined by the configuration of the earth. When they perish it is but a temporary death, to be followed by a life often more full and brilliant than the first. The second owe their prosperity to the caprice of a sovereign, or to political combinations that pass away and leave no trace. Thebes and Nineveh were artificial cities; both have disappeared and left behind them nothing but their ruins; they have been replaced only by villages and unimportant towns. On the other hand, Memphis lives again in Cairo, and, when the depopulation of Babylon was complete, Seleucia and Ctesiphon, Kouffa and Bagdad sprang up to carry on her work.

The centre of a refined civilisation and of wide-stretching

commercial relations, Babylon could not have been without an original art, and one marked with the peculiar characteristics of the national genius. Unhappily, the materials at her command were far inferior to those of which the Egyptians and Greeks could dispose. From this it has resulted that, on the one hand, her productions never passed a certain level of excellence, and, on the other, that they have been ill preserved. The Babylonians were not among those happy peoples whose artists could exercise their tools upon the one material that gives birth to great sculptors and great architects—a stone soft enough to yield kindly to the chisel, but hard enough to preserve to eternity the suggestive forms impressed upon it by the hand of man.

Our knowledge, therefore, of Chaldæan art will bear no comparison with what we have discovered as to the art of Egypt and Greece, of Etruria and Rome. So far as we can form a judgment from the remains that have come down to us, it was an art much less varied and comprehensive than that of Egypt. The tombs of Memphis and Thebes, with their pictured walls, reflect, as in a faithful mirror, the most interesting and most amusing of all spectacles, the daily life of the oldest of all civilized societies. In Chaldæa there is nothing of the kind. The Chaldæan tomb gives us, by its arrangement and furnishing, glimpses of a faith similar at bottom to that of Egypt, but we find nothing parallel to the representations of daily work and pleasure which fill the mastabas and the Theban sepulchres ; there is nothing that can be compared to those animated forms and images that play over again on the tomb walls the long drama of a hundred acts whose first performance occupied so many centuries and filled a stage stretching from the swamps of the Delta to the cataracts of Syene. We are more especially grateful to these funerary scenes for handing down to us, in a safe niche in the temple of the arts, those poor and humble folk who count for so little in this world where they bear the heaviest burdens, who depend for remembrance after death upon the services they render to the great. We shall search in vain among the scanty remnants of Babylonian sculpture for the attitude, gestures, and features of the laborious workmen upon whom the prosperity of the country was built. We shall find neither the tradesmen and artisans of the towns, nor the agriculturists who cultivated the fields and gave them the water for which they never ceased to thirst. No hint is given of those

fishermen of the Persian Gulf who lived entirely, according to Herodotus, upon dried fish ground to powder and made into a kind of cake.[1] The naive, picturesque, and anecdotic illustrations of common life, which are so plentiful in Egypt, are almost completely wanting to the art of Chaldæa.

On the other hand, we find, as we might have expected from what we know of Chaldæan society, continual traces of the sacerdotal spirit, and of the great part played by the king with the help and under the tutelage of the priesthood. Upon the walls of palaces, temples, and towns, on the statuettes of bronze and terra cotta which were buried under the thresholds of buildings and placed as votive offerings in the temples, upon cylinders and engraved stones, we find only complex and varied emblems, fantastic and symbolic forms, attitudes suggestive of worship and sacrifice (Figs. 20 and 21), images of gods, goddesses, and secondary genii, princes

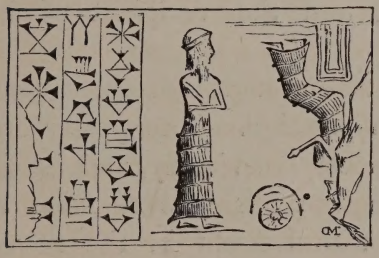


FIG. 20.—Chaldæan Cylinder.

FIG. 21.—Chaldæan Cylinder; from the British Museum.[2]

surrounded with royal pomp and offering their homage to the deity. Hence a certain poverty and monotony and the want of recuperative power inseparable from an absorbed contemplation of sacred types and of a transcendental world.

Assyrian society was different in many respects from that of Chaldæa. The same gods, no doubt, were adored in both countries, and their worship involved a highly-placed priesthood; but at Nineveh the royal power rested on the army, and the

[1] HERODOTUS, i. 200. A similar article of food is in extensive use at the present day in the western islands of Scotland, and upon other distant coasts where the soil is poor.—ED.

[2] Upon the subject of this cylinder, in which George Smith wished to recognise a representation of Adam and Eve tempted by the serpent, see M. JOACHIM MÉNANT'S paper entitled, *La Bible et les Cylindres Chaldéens* (Paris, 1880, Maisonneuve, 8vo). M. Ménant makes short work of this forced interpretation and of several similar delusions which were beginning to win some acceptance.

initiative and independence of the sovereign were much greater than in the case of Babylon. Assyria was a military monarchy in the fullest sense of the word. Almost as often as the spring came round the king led his invincible legions to the conquest of new subjects for Assur. He traversed deserts, crossed trackless mountain chains, and plunged into forests full of hidden dangers. He destroyed the walls and towers of hostile cities, in spite of the rain of arrows, stones, and boiling pitch that poured upon himself and his hosts; he was at once the skilful captain and the valiant soldier, he planned the attack and never spared himself in the *mêlée*. First in danger, he was the first in honour. In person he implored the good will of the god for whom he braved so many dangers, in person he thanked him for success and presented to him the spoils of the conquered enemy. If he was not deified, like the Pharaohs, either alive or after his death, he was the vicar of Assur upon earth, the interpreter of his decrees and their executor, his lieutenant and pontif, and the recipient of his confidences.[1]

There was no room by the side of this armed high priest for a sacerdotal caste at all equal to him in prestige. The power and glory of the king grew with every successive victory, and in the vast empire of the Sargonids, the highest places were filled by men whom the monarch associated with himself in the never-ending work of conquest and repression. First of all came a kind of grand vizier, the *Tartan*, or commander-in-chief of the royal armies. This is the personage we so often find in the bas-reliefs facing the king and standing in an attitude at once dignified and respectful (see Fig. 22). Next came the great officers of the palace, the *ministers* as we should call them in modern parlance, and the governors of conquered provinces. Eunuchs were charged with the supervision of the harem and, as in the modern East, occupied high places at court. They may be recognized in the bas-reliefs, where they are grouped about the king, by their round, beardless faces (see Figs. 23 and 24). The *Kislar-Aga* is, in the Constantinople of to-day what more than one of these personages must have been in Nineveh. Read the account given by Plutarch, on the authority of Ctesias, of the murderous and perfidious intrigues that stained the palace of Susa in the time of Artaxerxes-Mnemon. You will then have some idea of the part, at once

[1] Upon the sacred functions of the king, see Layard, *Nineveh*, vol. ii. p. 474.

FIG. 22.—The King Sargon and his Grand Vizier. Bas-relief from Khorsabad ; in the Louvre. Alabaster. Height 116 inches.
Drawn by Saint-Elme Gautier.

FIG. 23.—The suite of Sargon, *continued.* Bas-relief from Khorsabad; in the Louvre. Alabaster. Height 90 inches. Drawn by Saint-Elme Gautier.

FIG. 24.—The suite of Sargon, *continued*. Bas-relief from Khorsabad. Alabaster. Height 97 inches.
Drawn by Saint-Elme Gautier.

obscure and preponderant, that the more intelligent among these miserable creatures were able to play in the households of the great conquerors and unwearied hunters by whom the palaces at Khorsabad, Kouyundjik, and Nimroud, were successively occupied.

All these military officers and adminstrators, these priests of the different gods, and the domestics who were often the most powerful of all, looked to the hand of the king himself and depended upon no other master. Courage and military talent must have been the surest roads to advancement, but sometimes, as under the Arab califs and the Ottoman sultans, the caprice of the sovereign would lead him to raise a man from the lowest ranks to the highest dignities of the state. The *régime* of Assyria may be described in the words applied to that of Russia, it was despotism tempered with assassination. "And it came to pass, as he (Sennacherib) was worshipping in the house of Nisroch his god, that Adrammelech and Sharezer his sons smote him with the sword: and they escaped into the land of Armenia. And Esarhaddon his son reigned in his stead."[1] Sennacherib's father, Sargon, perished in the same fashion.

These murders were, perhaps, the revenge for some outrage or punishment imprudently inflicted in a moment of anger; but however that may have been, neither in the one case nor the other did they hinder the legitimate heir from succeeding his father. Sennacherib replaced Sargon, and Esarhaddon Sennacherib. The Assyrian supremacy was only supported by the constant presence, at the head of the army, of a king ready for every eventuality; a few weeks of anarchy or interregnum would have thrown the whole empire into confusion; the royal power was the keystone of the arch, the element upon which depended the stability of a colossal edifice subjected to various strains. In such a society, art could hardly have had a mission other than the glorification of a power without limit and without control—a power to which alone the Assyrians had to look for a continuance of their dearly-won supremacy. The architect, the sculptor, and the painter, exhausted the resources of their arts, the one in building a palace for the prince on a high mound raised to dominate the surrounding plain, the others in decorating it when built and multiplying the images of its almost divine inhabitant. The exploits of the

[1] 2 Kings xix. 37.

sovereign, his great and never-ending achievements as a conqueror and destroyer of monsters, as pontif of Assur and the founder of palaces and cities—such are the themes to which Assyrian sculpture devoted itself for many centuries, taking them up and varying them in countless ways, and that, apparently, without any fear that he for whom the whole work was intended would ever grow weary of the repetition.

Such themes presuppose the actual occurrence of the events represented and the artists' realization either from personal observation or from descriptions. This gives rise to a very sensible difference between Chaldæan sculpture and that of Assyria, so far at least as the latter is to be studied in the decorations of a palace. In those characteristics and qualities of execution which permit of a definition, the style is no doubt the same as in Chaldæa. The artists of Babylon and those of Nineveh were pupils in one school—they saw nature with the same eyes; the same features interested and attracted the attention of both; they had the same prejudices and the same conventions. The symbols and combinations of forms we have noticed as proper to Chaldæan art are here also; scenes of invocation to gods and genii; ornamental groups and motives. An instance of the latter is to be found in the rich embroidery with which the robes of the Assyrian kings are covered.[1] Finally, we must remember that all Assyrian art was not included in the adornment of the palace. Before a complete and definite judgment can be formed upon it the monuments of religious and industrial art should be passed under review, but, unhappily, no temple interior, and a very small number of objects of domestic luxury and daily use, have come down to us. These gaps are to be regretted, but we must not forget that the bas-reliefs were ordered by the king, that the thousands of figures they contain were introduced for the sake of giving *éclat* to the power, the valour, and the genius of the sovereign, and that the best artists of which Assyria could boast were doubtless entrusted with their execution. Under the reserves thus laid down we may, then, devote ourselves to the study of the Ninevite sculptures that fill the museums of London and Paris; we may consider them the strongest and most original creations of Assyrian art.

Now the sculpture upon the alabaster slabs with which the palace

[1] LAYARD, *The Monuments of Nineveh* (folio, 1849), plates 43-50.

walls of Shalmanesner and Sargon, of Sennacherib and Assur-banipal, were covered, confines itself mainly to marches, combats, and sieges, it is more *realistic* than the sculpture of Chaldæa, a country that had done less, especially upon fields of battle, but had invented more and done more thinking than its bellicose rival. We owe no small debt of gratitude to the swordsmen of Assyria, in spite of the blood they shed and the horrible cruelties they committed and delighted in seeing commemorated in the figured

FIG. 25.—Fragment of a bas-relief in alabaster. Louvre. Height 23 inches. Drawn by Saint-Elme Gautier.

histories of their reigns. The works entrusted to their artists have left us precious documents and the elements for a restoration of a vanished world. Philologists may take their time over the decipherment of the texts inscribed on the reliefs, but the great people of prey who, for at least four centuries, pillaged all Asia without themselves becoming softened by the possession of so much accumulated wealth, live, henceforward, in the long series of pictures recovered for the world by Layard and Botta. The stern

conquerors reappear, armed, helmeted, and cuirassed, as they passed before the trembling nations thirty centuries ago. They are short of stature, but vigorous and sturdy, with an exceptional muscular development. They were, no doubt, prepared for their military duties from infancy by some system of gymnastic

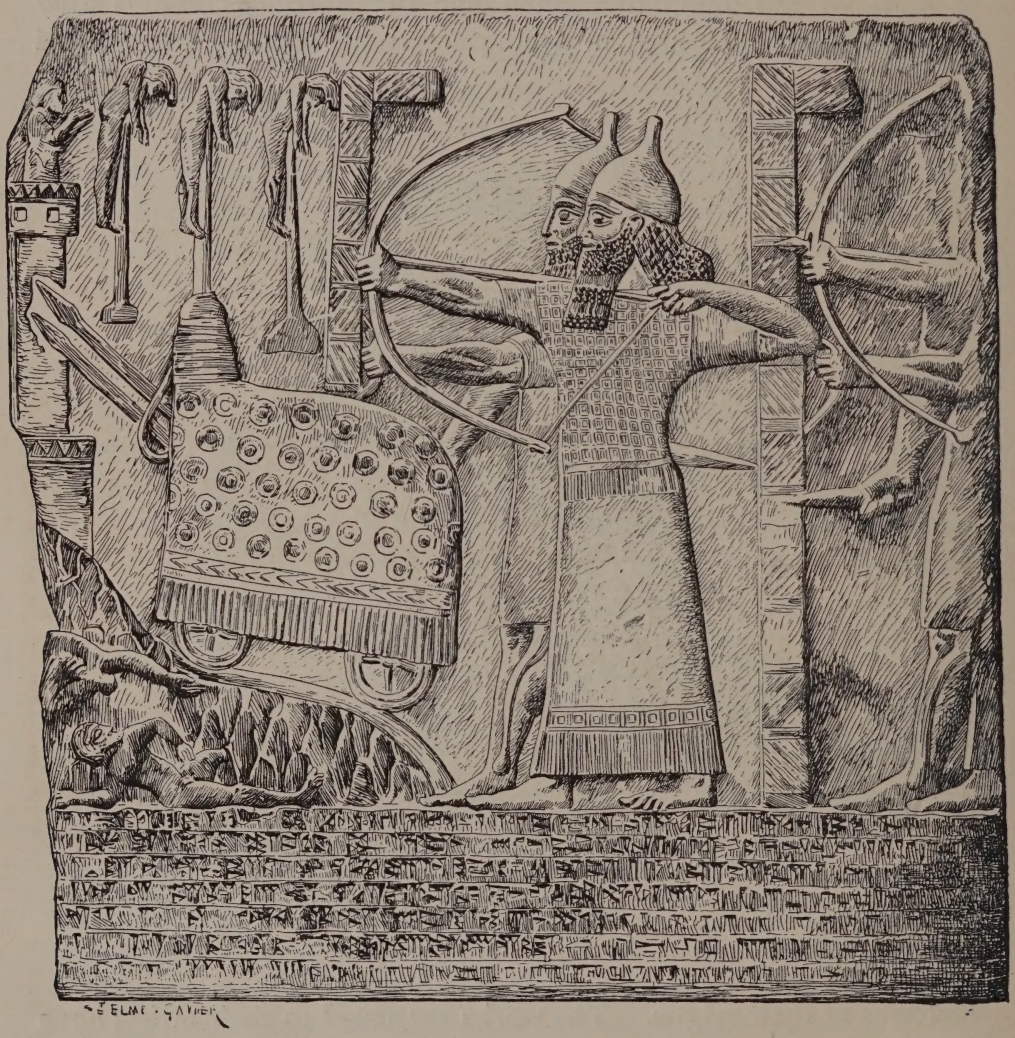


Fig. 26.—Bas-relief of Tiglath Pileser II. ; from Nimroud. British Museum. Height 44 inches. Drawn by Saint-Elme Gautier.

exercises, such as have been practised by other nations of soldiers. Their noses are high and hooked, their eyes large, their features as a whole strongly Semitic (see Fig. 25).

The moral character of the people is shown with no less clearness.

The ferocity they preserved amid all the luxurious appliances of their civilization is commemorated. Atrocities of every kind find a place in the reliefs. Among the prisoners of war the most fortunate are those led by a cord passed through their lips. Others are mutilated, crucified, flayed alive. Tiglath Pileser II. is shown to us besieging a city, before whose walls he has impaled three prisoners taken from the defenders (see Fig 26). Elsewhere we find scribes counting over heaps of heads before paying the price for them.[1] When these had come from the shoulders of

FIG. 27.—Feast of Assurbanipal; from Kouyundjik. British Museum. Height 20¾ inches. No. 1, The servants of the feast.

important enemies they were carried in procession and treasured as honourable trophies. In one relief we find Assurbanipal, after his return to Nineveh from the subjugation of the southern rebels, lying upon a luxurious couch in the garden of his harem and sharing a sumptuous meal with a favoured wife. Birds are singing

[1] LAYARD, *A Second Series of the Monuments of Nineveh* (folio, 1853), plates 26 and 27. The scribes in question seem to be writing upon rolls of leather.

in the trees, an attendant touches the harp, flowers and palms fill the back-ground, while a head, the head of the Elamite king, whom Assurbanipal conquered and captured in his last campaign, hangs from a tree near the right[1] of the scene (see Figs. 27 and 28). The princes who took pleasure in these horrors were scrupulous in their piety. We find numberless representations of them in attitudes of profound respect before their gods, and sometimes they bring victims and libations in their hands (see Fig. 29). Thus, without any help from the inscriptions, we may divine from

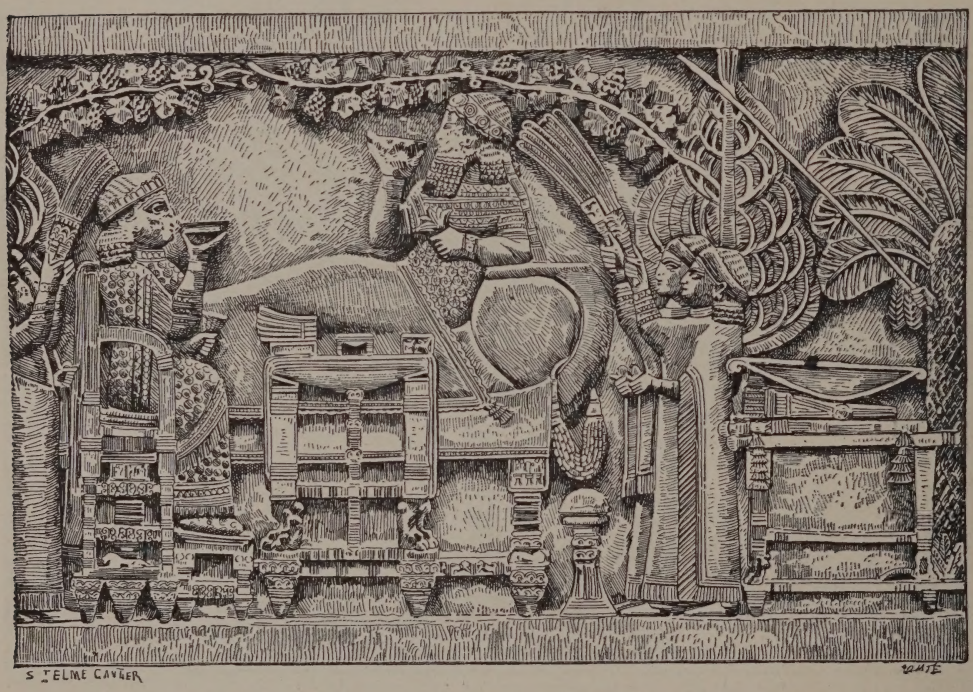


Fig. 28.—Feast of Assurbanipal, *continued*. No. 2, The king and queen at table. Drawn by Saint-Elme Gautier.

the sculptures alone what strange contrasts were presented by the Assyrian character—a character at once sanguinary and voluptuous, brutal and refined, mystical and truculent.

It is not only by what it says, it is by what it leaves untold, by what it forgets to tell, that art has left us such a sincere account of

[1] Throughout this work the words "right" and "left" refer to the right and left of the cuts, *not* of the reader. By this system alone can confusion be avoided in describing statues and compositions with figures.—Ed.

FIG. 29.—Offerings to a god; alabaster relief. Louvre. Height 10 feet.

this singular nation. The king and his lieutenants, his ministers and household officers, the veterans who formed the strength of his legions and the young men from whom their numbers were recruited, did not constitute the whole of the Assyrian nation. There were also the tillers of the soil, the followers of those countless trades implied by a civilized society—the peasants, artisans, and merchants of every kind, who fed, clothed, and equipped the armies; the men who carried on the useful but modest work without which the fighting machine must soon have come to a standstill. And yet they are entirely absent from the sculptures in which the artist seems to have included everything that to him seemed worthy of interest. We meet them here and there, but

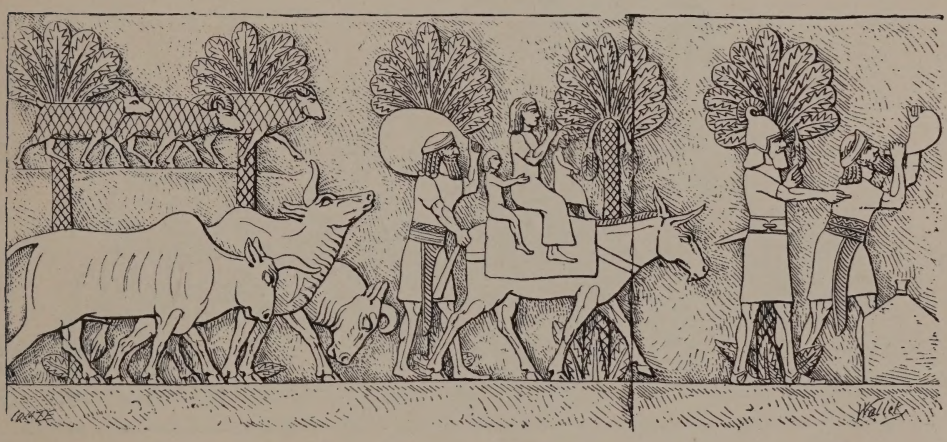


FIG. 30.—Convoy of prisoners. Kouyundjik. From Layard.

only by accident. They may be descried now and then in the background of some scene of war, acting as labourers or in some other humble capacity. Otherwise the sculptor ignored their existence. They were not soldiers, which was much as to say they were nothing. Can any other instance be cited of an art so well endowed entirely suppressing what we should call the civil element of life? Neither do we find women in the bas-reliefs; that in which the queen of Assurbanipal occurs is quite unique in its way. Except in scenes representing the capture of a town and the carrying off of its inhabitants as prisoners of war, females are almost entirely wanting. On those occasions we sometimes find them carried on mules or in chariots (see Figs. 30 and 31). In

certain bas-reliefs of Assurbanipal, treating of his campaign against Susa, women are playing the tambourine and singing the king's praises. But all these are exceptions. Woman, whose grace and beauty were so keenly felt by the Egyptians, is almost completely absent from the sculpture of Assyria.

By thus limiting its scope, sculpture condemned itself to much repetition and to a uniformity not far removed from sameness ; but its very silences are eloquent upon the inhuman originality of a system to which Assyria owed both the splendour of her military successes and the finality of her fall. The great entrenched camp, of which Nineveh was the centre, once forced ; the veteran ranks, in which constant war, and war without quarter, had made

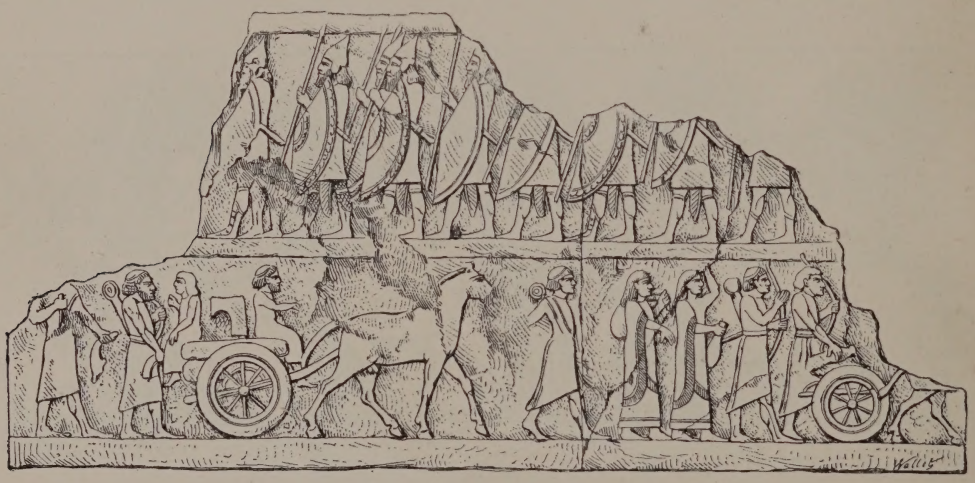


Fig. 31.—Convoy of prisoners. Kouyundjik. From Layard.

such wide gaps, once broken, nothing remained of the true Assyria but the ignorant masses of a second-class state to whom a change of masters had little meaning, and a few vast buildings doomed soon to disappear under their own ruins.

When we have completed our examination of Assyrian sculpture, so rich in some respects, so poor in others, we shall understand the rapidity with which silence and oblivion overtook so much glory and power ; we shall understand how some two centuries after the victory of Nabopolassar and the final triumph of Babylon and her allies, Xenophon and his Greeks could mount the Tigris and gaze upon the still formidable walls of the deserted cities of Mespila and Larissa without even hearing the name of Nineveh pronounced. Eager for knowledge as they were, they passed over the

ground without suspecting that the dust thrown up by their feet had once been a city famous and feared over all Asia, and that the capital of an empire hardly less great than that of the Artaxerxes whom they had faced at Cunaxa, had once covered the ground where they stood.

CHAPTER II.

THE PRINCIPLES AND GENERAL CHARACTERISTICS OF ASSYRO-CHALDÆAN ARCHITECTURE.

§ 1.—*Materials.*

CHALDÆA was the cradle of the civilization, and consequently of the art, whose characteristics we have to define. Now the soil of Chaldæa to a great depth beneath the surface is a fine loose earth, similar to that of the Nile Delta. At a few points only on the plain, and that near the Persian Gulf, are there some rocky eminences, the remains of ancient islands which the gradual encroachment of the two great rivers has joined to the mainland of Asia. Their importance is so slight that we may fairly ignore their existence and assert generally that Chaldæa has no stone. Like all great rivers, the Tigris and Euphrates in the upper and middle parts of their courses carry down pieces of rock from their native mountains, but after they enter upon the alluvial ground near the boundary between Assyria and Chaldæa their streams become sluggish, and these heavy bodies sink to the bottom and become embedded in the soil; the water no longer carries on with it anything but the minute particles which with the passage of centuries form immense banks of clay. In the whole distance between Bagdad and the sea you may take a spade, and, turn up the soil wherever you please, you will not find a stone as big as a nut.

In this absence of a natural stone something had to be found to take its place, and the artificial material we call brick was invented. The human intellect refuses to give up the contest with nature before the first obstacles that seem to bar its progress; if it cannot brush them aside it turns their flank. The least accident is often enough to suggest the desired expedient. The origin of almost all the great discoveries that are studded over the

history of civilization may be traced to some lucky chance. The first inhabitants of Chaldæa fashioned rude kitchens for the cooking of their simple food out of moist and plastic clay, the fires of reed and broken wood lighted on these simple hearths reddened and hardened the clay till it became like rock. Some bystander more observant than the rest noted the change and became the father of ceramics. We use the word in its widest, in its etymological sense. *Ceramics* is the art of fashioning clay and burning it in the fire so as to obtain constructive materials, domestic utensils, or objects of luxury and ornament.[1]

Even before the first brick or pottery kiln was erected it must have been recognized that in a climate like that of Chaldæa the soil when dried in the sun was well fitted for certain uses. Among the *débris* left by the earliest pioneers of civilization we find the remains of vases which seem to have been dried only in the sun. But porous and friable pottery like this could only be used for a few purposes, and it was finally renounced as soon as the art of firing the earth, first in the hot ashes of the domestic hearth, and afterwards in the searching flames of the close oven, was discovered. It was otherwise with brick. The desiccation produced by the almost vertical sun of Mesopotamia allowed it to be used with safety and advantage in certain parts of a building. In that condition it is called crude brick, to distinguish it from the harder material due to the direct heat of wood fires.

In any case the clay destined for use as a building material was subject to a first preparation that never varied. It was freed from such foreign bodies as might have found their way into it, and, as in Egypt, it was afterwards mixed with chopped or rather pulverized straw, a proceeding which was thought to give it greater body and resistance. It was then mixed with water in the proportions that experience dictated, and kneaded by foot in wide and shallow basins.[2] The brickmakers of Mossoul go through the same process to this day.

As soon as the clay was sufficiently kneaded, it was shaped in almost square moulds. In size these moulds surpassed even those

[1] G. CURTIUS is of opinion that the word κέραμος, and consequently its derivatives (κεραμεύς, κεραμεία, κεραμεική, &c.), springs rather from a root CRA, expressive of the idea to *cook*, than from the word κεράννυμι, to *mix, knead* (*Grundzüge der Griechischen Etymologie*, p. 147, 5th edition).

[2] See *Nahum* iii. 14.

of Egypt: their surfaces were from 15¼ to 15½ inches square, and their thickness was from 2 to 4 inches.[1] It would seem that these artificial blocks were given this extravagant size to make up for the absence of stone properly speaking; the only limit of size seems to have been that imposed by difficulties of manufacture and handling.

Crude brick never becomes hard enough to resist the action of water. In Greek history we read how Agesipolis, King of Sparta, when besieging Mantinea, directed the stream of the Ophis along the foot of its walls of unburnt brick, and so caused them to crumble away. Cimon, son of Miltiades, attacked the defences of Eion, on the Strymon, in the same fashion. When desiccation was carried far enough, such materials could be used, in interiors at least, so as to fulfil the same functions as stone or burnt brick. Vitruvius tells us that the magistrates who had charge of building operations at Utica would not allow brick to be used until it was five years old.[2] It would seem that neither in Chaldæa nor still less in Assyria was any such lengthy restriction imposed. It is only by exception that crude bricks of which the desiccation has been carried to the farthest possible point have been found in the palaces of Nineveh; almost the only instance we can give is afforded by the bricks composing the arches of the palace doorways at Khorsabad. They are rectangular, and into the wedge-shaped intervals between their faces a softer clay has been poured to fill up the joints.[3] As a rule things were done in a much less patient fashion. At the end of a few days, or perhaps weeks, as soon, in fact, as the bricks were dry and firm enough to be easily handled, they were carried on to the ground and laid while still soft.

This we know from the evidence of M. Place, who cut many exploring shafts through the massive Assyrian buildings, and could judge of the condition in which the bricks had been put in place by the appearance of his excavations. From top to bottom

[1] Even these dimensions were sometimes passed. The Louvre possesses an Assyrian brick rather more than 17½ inches square. See DE LONGPERIER, *Notice des Antiquités Assyriennes* (3rd edition, 1854, 12mo), No. 44.

[2] VITRUVIUS, l. ii. ch. 3.

[3] PLACE, *Ninive et l'Assyrie*, vol. i. p. 225. The vault of the gallery discovered by LAYARD in the centre of the tower that occupied a part of the mound of Nimroud was constructed in the same fashion. *Discoveries in the Ruins of Nineveh and Babylon*, p. 126.

their sides showed a plain and uniform surface; not the slightest sign of joints was to be found. Some might think that the bricks, instead of being actually soft, were first dried in the sun and then, when they came to be used, that each was dipped in water so as to give it a momentary wetness before being laid in its place. M. Place repels any such hypothesis. He points out that, had the Assyrian bricklayers proceeded in that fashion, each joint would be distinguishable by a rather darker tint than the rest of the wall. There is nothing of the kind in fact. The only things that prove his excavations to have been made through brick and not through a mass of earth beaten solid with the rammer are, in the first place, that the substance cut is very homogeneous and much more dense than it would have been had it not been kneaded and pressed in the moulds; and, secondly, that the horizontal courses are here and there to be distinguished from each other by their differences of tint.[1]

The art of burning brick dates, in the case of Chaldæa, from a very remote epoch. No tradition subsisted of a period when it was not practised. After the deluge, when men wished to build a city and a tower which should reach to heaven, "they said to one another, Go to, let us make brick, and burn them throughly; and they had brick for stone, and slime had they for mortar." [2]

The Babylonian bricks were, as a rule, one Chaldæan foot (rather more than an English foot) square. Their colour varies in different buildings from a dark red to a light yellow,[3] but they are always well burnt and of excellent quality. Nearly all of them bear an inscription to the following effect: "Nebuchadnezzar, King of Babylon, restorer of the pyramid and the tower, eldest son of Nabopolassar, King of Babylon, I." In laying the brick the face bearing this inscription was turned downwards. The characters were impressed on the soft clay with a stamp. More than forty varieties have already been discovered, implying the existence of as many stamps (see Fig. 32). In Assyria these inscriptions were sometimes stamped, sometimes engraved with the hand (Fig. 33).

Most of the bricks are regular in shape, with parallel and rectangular faces, but a few wedge-shaped ones have been found, both in Chaldæa and Assyria. These must have been

[1] PLACE, *Ninive et l'Assyrie*, vol. i. pp. 211-224.

[2] *Genesis* xi. 3.

[3] LAYARD, *Discoveries*, pp. 506 and 531.

made for building arches or vaults. Their obliquity varies according to their destined places in the curve.[1]

The body of the enamelled bricks differs from that of the ordinary kind. It is softer and more friable, appearing to be scarcely burnt.[2] This difference, at which M. Place was so much surprised, had its reason. The makers understood that their enamel colours when vitrified would penetrate deeper into and be more closely incorporated with the material upon which they were placed were the latter not so completely hardened.

Crude brick, burnt brick, and brick enamelled, those were the only materials at the command of the architect, in the cities, at

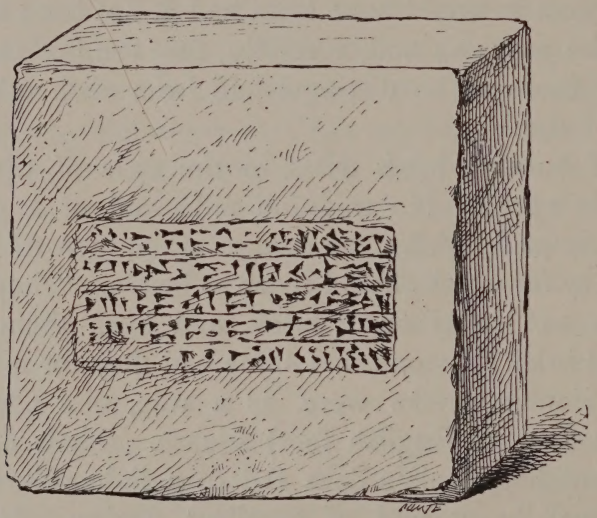


Fig. 32.—Babylonian brick; from the Louvre. 16 inches square on face, and 4 inches thick.

least, of Chaldæa. A few fragments of basalt and diorite have certainly been found in their ruins, especially at Tello, recently excavated by M. de Sarzec; but we can easily tell from the appearance of these blocks that they played a very subordinate

[1] See, for Chaldæa, Loftus, *Travels and Researches*, p. 133; and for Assyria, Place, *Ninive et l'Assyrie*, vol. i. p. 250, and vol. ii. plates 38 and 39. As an example of the varieties of section presented by these bricks, we may cite those found by M. de Sarzec in the ruins of Tello, which belonged to a circular pillar. This pillar was composed of circular bricks, placed in horizontal courses round a centre of the same material. Elsewhere triangular bricks, which must have formed the angles of buildings have been found. Taylor, *Notes on the Ruins of Mugheyr* (*Journal of the Royal Asiatic Society*, vol. xv. p. 266). At Abou Shareïn, this same traveller found convex-sided bricks (*Journal*, &c., vol. xv. p. 409).

[2] Place, *Ninive*, &c., vol. i. p. 233.

part in the buildings into which they were introduced. Some of them seem to have been employed as a kind of decoration in relief upon the brick walls; others, and those the most numerous, appear to have been used in the principal entrances to buildings. Upon one face a semicircular hollow or socket may be noticed, in which the foot of the bronze pivots, or rather the pivot shod and faced with bronze, upon which the heavy timber doors and their casings of metal were hung, had to turn. The marks of the consequent friction are still clearly visible.[1] The dimensions of these stones are never great, and it is easy to see that their employment for building purposes was always of the most restricted nature. They had indeed to be brought from a great

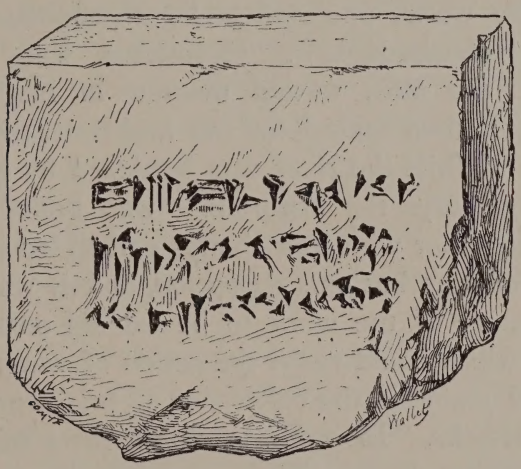


FIG. 33.—Brick from Khorsabad; Louvre. $12\frac{2}{5}$ inches square, and $4\frac{4}{5}$ inches thick.

distance. The towns upon the Persian Gulf might get them from Arabia.[2] Babylon and Nineveh must have drawn them from the

[1] Some of these fragments are in the Louvre. They are placed on the ground in the Assyrian Gallery. Their forms are too irregular to be fitted for reproduction here. But for the hollow in question, one might suppose them to be mere shapeless boulders. LAYARD noticed similar remains among the ruins of Babylon, *Discoveries*, &c., p. 528.

[2] M. OPPERT is even inclined to think that some of them came from the peninsula of Sinai and the eastern shores of Egypt (*Revue Archéologique*, vol. xlii. p. 272). The formation of the Arabian hills is not yet very well known, and we are not in a position to say for certain whence these rocks may have come. It seems probable however, that they might have been obtained from certain districts of Arabia, from which they could be carried without too great an effort to within reach of the canals fed by the Euphrates, or of some port trading with the Persian Gulf.

upper valleys of the Tigris and Euphrates.[1] But quarrying and transport involved an expenditure that prevented any thought of bringing these volcanic rocks into common use.

Compared with the towns of the lower Euphrates, Babylon was not far from mountains whence, by means of canals and rivers, she might have easily obtained a limestone of good quality. Even in these days, when commerce and industry have fallen so low in those regions, the gypseous alabaster from the neighbourhood of Mossoul is transported in no unimportant quantities as far as Bagdad. It is used for lining baths and those *serdabs* to which the people retreat in summer.[2]

The remains of the great capital show no trace of dressed stone. And yet it was used during the second empire in some of the great public works undertaken by Nabopolassar and more especially by Nebuchadnezzar. Herodotus, who saw Babylon, declares this in the most formal manner in his description of the bridge which then united, for the first time, the two banks of the Euphrates. While the river was bordered by quays of burnt brick, the bridge, says the historian, "was built of very large stones, bound together with iron clamps embedded in lead."[3]

That, however, was but one exception, and it was necessitated by the very nature of the work to be carried out. No cement was to be had which could resist the action of water for an indefinite period and maintain the coherence of brickwork subjected to its unsleeping attacks. In order to obtain piers capable of withstanding the current during the great floods, it was better too to use blocks of considerable weight, which could be held together by metal tenons or clasps.

It was but at rare intervals that buildings had to be erected in which the habits of ages had to be thus abandoned. Why is it that such works have perished and left no sign? The question may be easily answered. When the ruins of Babylon began to be used as an open quarry, the stone buildings must have been the first to disappear. This material, precious by its rarity and in greater request than any other, was used again and again until no trace of its original destination or of the buildings in which it was found remained.

[1] LAYARD, *Discoveries*, &c., p. 528. [2] LAYARD, *Discoveries*, p. 116.

[3] HERODOTUS, i. 186. DIODORUS (ii. viii. 2), quoting Ctesias, speaks in almost the same terms of this stone bridge, which he attributes to Semiramis.

In Assyria long chains of hills traversed the plain and stretched here and there as far as the borders of the two rivers, besides which the last buttresses of the mountains of Kurdistan came very near the left bank of the Tigris. These hills all contained limestone. Two sorts were found: one fine, hard, close grained, and a little shelly, the other softer and more friable.

For the decoration of his monumental doorways and the lining of his richest apartments, the architect chose and committed to the sculptor those fine slabs of gypseous alabaster of which so many examples are to be seen in the Louvre and British Museum. In the plains gypsum serves as a base or foundation for the wide banks of clay that spread over the country, and are much less thick than in the south of Chaldæa. Alabaster is there to be met with in great quantities, often but little below the surface of the soil.[1] It is a sulphate of chalk, gray in colour, soft and yet susceptible of polish. But it has many defects; it breaks easily and deteriorates rapidly on exposure to the air. The Assyrians, however, did not fear to use it in great masses, as witness the bulls in the Louvre and British Museum. Before removal these carved man-headed animals weighed some thirty-five tons, and some of those remaining at Khorsabad and Kouyundjik are still larger.

In Assyria as in Chaldæa the dark and hard volcanic rocks have only been found in a few isolated fragments. They were used by the statuary and ornamentist rather than by the architect, and we cannot say for certain where they got them. We know, however, that basalt and other rocks of that kind were found in the upper valleys of the streams that flowed into the two great rivers.[2]

The Assyrian architect had therefore only to stretch out his hand to win stone of a sufficiently varied nature from the soil of his own country or the flanks of its mountains. It was, of course, mediocre in quality but it had powers of resistance that fitted it for use in certain positions. At the first glance it is difficult to understand why so little use was made of it. But

[1] BOTTA, *Monuments de Ninive*, vol. v. p. 3.

[2] In the valley of the Khabour, the chief affluent of the Euphrates, LAYARD found volcanoes whose activity seemed only to have been extinguished at a very recent epoch. Long streams of lava projected from their sides into the plain. *Discoveries*, p. 307.

in truth stone was for the Assyrian no more than an accessary and complementary material; the bodies of his structures were never composed of it; it was mainly confined to plinths, pavements, and the internal linings of walls.

In spite of its apparent singularity this determined exclusion is to be easily explained. The Assyrian invented nothing. His language and his writing, his religion and his science, came from Chaldæa, and so did his art. When the kings of Resen, of Calech, and Nineveh, took it into their heads to build palaces, they imported architects, painters, and sculptors, from the southern kingdom. Why, it may be asked, did those artists remain so faithful to the traditions in which they had grown up when they found themselves planted among such different surroundings? The answer is, that nothing is more tenacious of life than those professional habits that are transmitted from one generation to another by the practical teaching of more or less close corporations, besides which we must remember that the Chaldæan methods were excellently well fitted for the satisfaction of those impatient princes at whose orders the works were undertaken. For the quarrying, dressing, and fixing of stone, a special and rather tedious education was required. The manufacture and laying of bricks was comparatively easy. A few weeks were sufficient to learn all that was to be learnt about the kneading and moulding of the earth, its desiccation in the sun or burning in the kiln. Provided that experienced men were forthcoming to superintend the latter operation, millions of good bricks could be made in the year.[1] All this required no lengthy apprenticeship. Their arrangement in horizontal courses or grouping at stated intervals, into those lines of battlements with which every wall was crowned, was done by the men of the *corvée*. Certain parts of the building, such as arches and vaults, required more care and skill, and were left, no doubt, to experienced masons and bricklayers, but, with these exceptions, the whole work could be confided to the first-comers, to those armies of captives whom we see in the bas-reliefs labouring in chained gangs like convicts.

Working in this fashion, even the most formidable works could be completed with singular rapidity. In Assyria, as in

[1] As for the simple and rapid nature of the process by which crude bricks are manufactured to the present day in Persia, see Texier, *L'Arménie et la Perse*, vol. ii. p. 64.

Chaldæa, a prince was no sooner seated firmly upon the throne than his architects set about erecting a palace which should be entirely his own. He had no wish that any name but his should be read upon its walls, or that they should display any deeds of valour but those due to his own prowess. In the life of constant war and adventure led by these conquering sovereigns, speed was everything, for they could never be sure of the morrow.

That considerations like these counted for much in the determination of the Assyrian architects to follow a system that the abundance of durable materials invited them to cast aside can hardly be doubted. They did not dare to rouse the displeasure of masters who disliked to wait; they preferred rather to sacrifice the honour and glory to be won by the erection of solid and picturesque buildings than to use the slowly worked materials in which alone they could be carried out.

Assyria was in all respects better provided than Chaldæa. Nature itself seemed to invite her to throw off her too docile spirit of imitation and to create an art of her own. Her possession of stone was not her only advantage over her southern neighbour, she had timber also; at least the Ninevite architect had to go a much shorter distance than his Babylonian rival in order to find it. From the summits of the lofty mounds, at whose feet he established his workshops, he could catch a distant view of mountain chains, whose valleys were clothed with forests of oak and beech, pine and cypress. There was nothing of the kind within reach of Lower Mesopotamia. The nearest mountains, those which ran parallel to the left bank of the Tigris but at a considerable distance, were more naked, even in ancient times, than those of Kurdistan and Armenia. From one side of the plain to the other there were no trees but the palm and the poplar from which timbers of any length could be cut. The soft and fibrous date-palm furnishes one of the worst kinds of wood in the world; the poplar, though more useful, is not much less brittle and light. From materials like these no system of carpentry could be developed that should allow great spaces to be covered and great heights to be reached. When Nineveh and, after her, Babylon, had conquered all Western Asia, she drew, like Egypt before her, upon the forests of Lebanon. There she obtained the beams and planks for the

ceilings and doors of her sumptuous palaces.[1] The employment, however, of these excellent woods must always have been rare and exceptional. Moreover, other habits had become confirmed. When these new resources were put at the disposition of architecture, the art was too old and too closely wedded to its traditional methods to accept their aid. In the use of wood, as in that of brick, Assyria neglected to make the best of the advantages assured to her by her situation and her natural products.

If Chaldæa was ill-provided with stone and timber, she had every facility for procuring the useful and precious metals. They were not, of course, to be found in her alluvial plains, but metals are easy of transport, especially to a country whose commerce has the command of navigable highways. The industrial centres in which they are manufactured are often separated by great distances from the regions where they are won from the earth. But to procure the more indispensable among them the dwellers upon the Tigris and Euphrates had no great distance to cover. The southern slopes of Zagros, three or four days' journey from Nineveh, furnished iron, copper, lead, and silver in abundance. Mines are still worked in Kurdistan, or, at least, have been worked in very recent times, which supply these metals in abundance. The traces of abandoned workings may be recognized even by the hasty

[1] As to the employment in Assyria of cedar from the Lebanon, see FRANÇOIS LENORMANT, *Histoire Ancienne*, vol. ii. p. 191, and an inscription of Sennacherib, translated by OPPERT, *Les Sargonides*, pp. 52, 53. Its use in Babylon is proved by several passages of the great text known as the *Inscription of London*, in which Nebuchadnezzar recounts the great works he had caused to be carried out in his capital (LENORMANT, *Histoire*, vol. ii. pp. 228 and 233). We find this phrase among others, "I used in the chamber of oracles the largest of the trees transported from the summits of Lebanon." LAYARD (*Discoveries*, pp. 356—7) tells us that one evening during the Nimroud excavations, his labourers lighted a fire to dry themselves after a storm, which they fed with timbers taken from the ruins. The smell of burning cedar, a perfume which so many Greek and Latin poets have praised (*urit odoratam nocturna in lumina cedrum*, VIRGIL, *Æneid*, vii. 13), apprised him of what was going on. In the British Museum (Nimroud Gallery, Case A), fragments of recovered joists may be seen. They are in such good preservation that they might be shaped and polished anew, so as to again bring out the markings and the fine dark-yellow tone which contributed not a little to make the wood so precious. It was sought both for its agreeable appearance and its known solidity; and experience has proved that the popular opinion which declared it incorruptible had some foundation.

and unlearned traveller, and a skilful engineer would, no doubt, make further discoveries.[1] Mr. Layard was unable to learn that any gold had been won in our days; but from objects found in the excavations, from inscriptions in which the Assyrians boast of their wealth and prodigality, from Egyptian texts in which the details of tributes paid by the Roten-nou, that is by the people of Syria and Mesopotamia, are given, it is clear that in the great days of Nineveh and Babylon those capitals possessed a vast quantity of gold, and employed it in a host of different ways. In the course of several centuries of war, victory, and pillage, princes, officers, and soldiers had amassed enormous wealth by the simple process of stripping the nations of Western Asia of every object of value they possessed. These accumulations were continually added to, in the case of Babylon, by the active commerce she carried on with the mineral-producing countries, such as the Caucasus, Bactriana, India, and Egypt.

There are some architectures—that of the Greeks for example—that preserve a rare nobility even when deprived of their metal ornaments and polychromatic decoration. The architects of Babylon and Nineveh were differently situated. Deprived of metals some of their finest effects would have been impossible. The latter could be used at will in flexible threads or long, narrow bands, which could be nailed or riveted on to wood or brick. They may be beaten with the hammer, shaped by the chisel, or engraved by the burin; their surfaces may be either dead or polished; the variety of shades of which they are capable, and the brilliance of their reflections, are among the most valuable resources of the decorator, and the colouring principles they contain provide the painter and enameller with some of his richest and most solid tones. In Chaldæa the architect was condemned by the *force majeure* of circumstances to employ little more than crude or burnt brick and bad timber; in Assyria he voluntarily condemned himself to the limitations they imposed. By the skillful and intelligent use of metals, he managed to overcome the resulting disadvantages in some degree, and to mask under a sumptuous decoration of gold, silver, and bronze, the deficiencies inherent in the material of which his buildings were mainly composed.

[1] LAYARD, *Nineveh*, vol. i. p. 223, and vol. ii. pp. 415-418.

§ 2.—*The General Principles of Form.*

If in our fancy we strip the buildings of Chaldæa and Assyria of all their accessories, if we take from them their surface ornament and the salience of their roofs, the bare edifice that remains is what geometricians call a *rectangular parallelopiped.*

Of all the types created by this architecture, the only one of which we still possess a few fairly well preserved examples is that of the palace. It is therefore the best known of them all, and the first to excite attention and study. Now, upon the artificial mound, the wide terrace, over which its imposing mass is spread, the palace may be likened to a huge box whose faces are all either horizontal or vertical (Plate V.). Even in the many-storied temples, whose general aspect is modified of course to a great extent by their height, the same element may be traced. We have endeavoured to restore some of these by collating the descriptions of the ancient writers with the remains that still exist in many parts of Mesopotamia (Plates II., III., and IV.). Their general form may be described as the box to which we have compared the palace repeated several times in vertical succession, each box being rather smaller than the one below it. By these means their builders proposed to give them an elevation approaching the marvellous. The system was in some respects similar to that of the pyramid, but the re-entering angles at each story gave them a very different appearance, at least to one regarding them from a short distance. Only now and then do we find any inclination like that of the sides of a pyramid, and in those cases it applies to bases alone (Plate IV.). As a rule the walls or external surfaces are perpendicular to their foundations.

We may, perhaps, explain the complete absence from Chaldæa of a system of construction that was so universal in Egypt by the differences of climate and of the materials used. Doubtless it rains less in Mesopotamia than even in Italy or Greece. But rain is not, as in Upper Egypt, an almost unknown phenomenon. The changes of the seasons are ushered in by storms of rain that amount to little less than deluges.[1] Upon sloping walls of dressed

[1] Oppert (*Expedition Scientifique*, vol. i. p. 86) gives a description of one of these storms that he encountered in the neighbourhood of Bagdad on the 26th of May.

stone these torrents could beat without causing any great damage, but where brick was used the inconveniences of such a slope would soon be felt. Water does not fall so fast upon a slope as upon a perpendicular wall, and a surface made up of comparatively thin bricks has many more joints than one in which stones of any considerable size are employed. As a rule the external faces of all important buildings were revetted with very hard and well burnt bricks. But the rain, driven by the wind, might easily penetrate through the joints and spread at will through the core of mere sun-dried bricks within. The verticality of Assyrian and Chaldæan walls was necessary, therefore, for their preservation. Without it the thin covering of burnt brick would have been unable to do its proper work of protecting the softer material within, and the sudden storms by which the plains were now and again half drowned, would have been far more hurtful than they were.

The Chaldæan palace, like the Egyptian temple, sought mainly for lateral development. Its extent far surpassed its elevation, and horizontal lines predominated in its general physiognomy. There was here a latent harmony between the architecture of nature and that of man, between the great plains of Mesopotamia, with their distant horizons, and the long walls, broken only by their crenellated summits, of the temples and palaces. There must, however, have been a certain want of relief, of visibility, in edifices conceived on such lines and built in such a country.

This latter defect was obvious to the Mesopotamians themselves, who raised the dwellings of their gods and kings upon an artificial mound with a carefully paved summit.[1] Upon this summit the structure properly speaking rested, so that, in Chaldæa, the foundations of a great building instead of being, as elsewhere, sunk beneath the soil, stand so high above it that the ground line of the palace or temple to which they belong rises above the plain to a height that leaves the roofs of ordinary houses and even the summits of the tallest palms far below. This arrangement gave a clearer salience and a more imposing mass to structures which would otherwise, on account of their monotomy of line and the vast

[1] LAYARD, *Nineveh and its Remains*, vol. ii. p. 119. When one of these mounds is attacked from the top, the excavators must work downwards until they come to this paved platform. As soon as it is reached no greater depth need be attempted; all attention is then given to driving lateral trenches in every direction. In Assyria the mass of crude bricks sometimes rests upon a core of rock which has been utilised to save time and labour (LAYARD, *Discoveries*, &c., p. 219).

excess of their horizontal over their vertical development, have had but little effect.

Such an arrangement would appear superfluous in the case of those towers in the shape of stepped pyramids, whose summits could be carried above the plain to any fanciful height by the simple process of adding story to story. But the Mesopotamian constructor went upon the same system as in the case of his palaces. It was well in any case to interpose a dense, firm, and dry

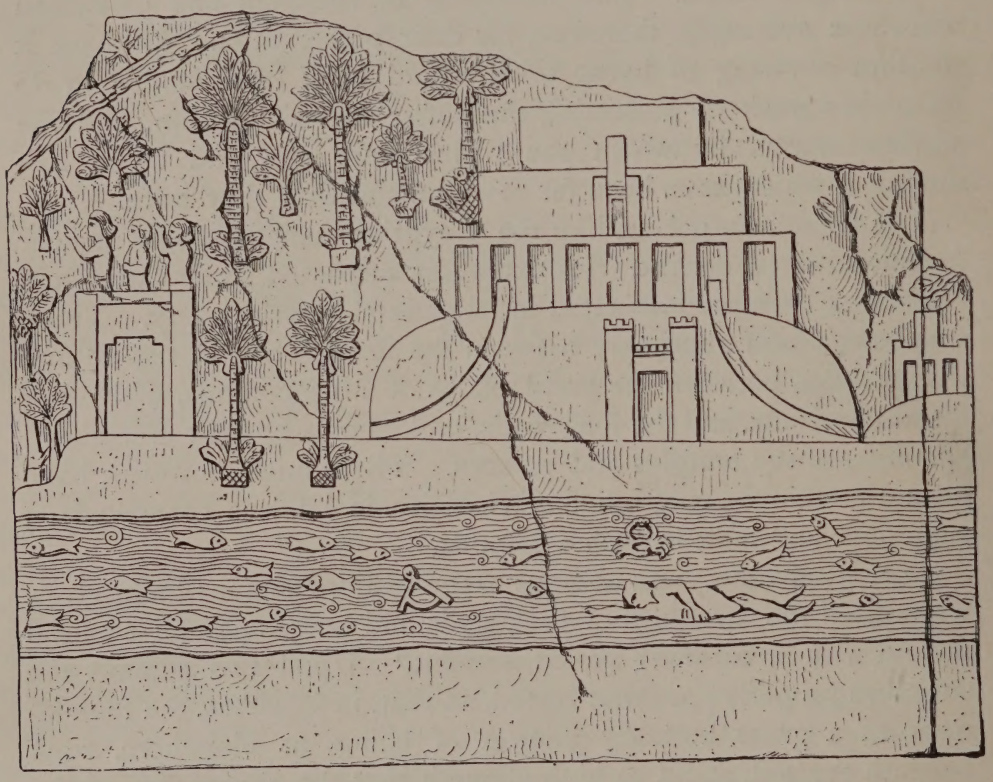


Fig. 34.—Temple; from a Kouyundjik bas-relief. Rawlinson, vol. i. p. 314.

mass between the wet and often shifting soil and the building, and to afford a base which by its size and solidity should protect the great accumulation of material that was to be placed upon it from injury through any settling in the foundations. Moreover, the paved esplanade had its place in the general economy. It formed a spacious court about the temple, a sacred *temenos* as the Greeks would have called it, a *haram* as a modern Oriental would say. It could be peopled with statues and decorated with mystic

emblems; religious processions could be marshalled within its bounds.

The general, we may almost say the invariable, rule in Mesopotamia was that every structure of a certain importance should be thus borne on an artificial hill. An examination of the ruins themselves and of the monuments figured upon the bas-reliefs shows us that these substructures did not always have the same form. Their faces were sometimes vertical, sometimes inclined; sometimes again they presented a gentle outward curve (see Fig. 34); but these purely external differences did not affect the principle. In all the river basins of Mesopotamia, whether of the Euphrates, the Tigris, or the smallest affluents of the Persian

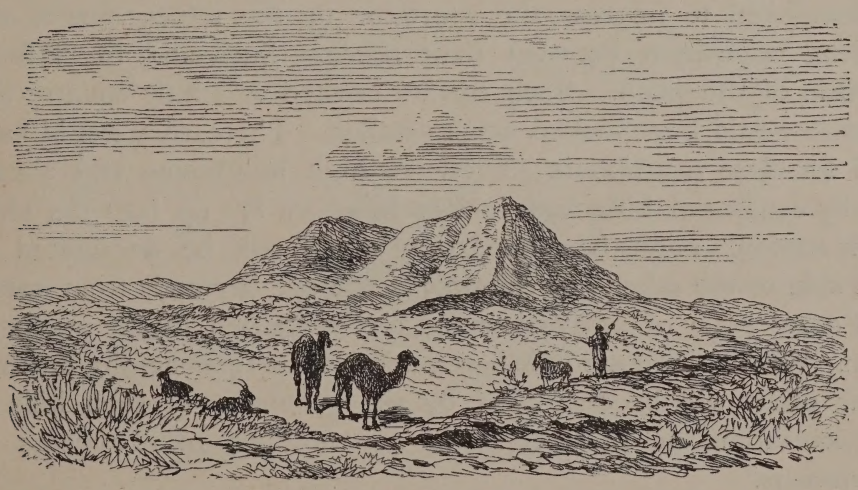


FIG. 35.—Tell-Ede, in Lower Chaldæa. From Rawlinson's *Five Great Monarchies.*

Gulf, whenever you see one of these *tells*, or isolated mounds, standing above the general surface of the plain, you may be sure that if you drive a trench into it you will come upon those courses of crude brick that proclaim its artificial origin. Rounded by natural disintegration and scarred by the rain torrents, such a hillock is apt to deceive the thoughtless or ignorant traveller, but an instructed explorer knows at a glance that many centuries ago it bore on its summit a temple, a fortress, or some royal or lordly habitation (Fig. 35).

The distinguishing feature of the staged towers is their striving after the greatest possible elevation. It is true that neither from Herodotus nor Diodorus do we get any definite statements as to

the height of the most famous of these monuments, the temple of Belus at Babylon;[1] Strabo alone talks of a stade (616 feet), and it may be asked on what authority he gives that measurement, which has been freely treated as an exaggeration. In any case we may test it to a certain extent by examining the largest and best preserved of the artificial hills of which we have spoken,[2] and we must remember that all the writers of antiquity are unanimous in asserting its prodigious height.[3] We run small risk of exaggeration, therefore, in saying that some of these Chaldæan temples were much taller than the highest of the Gizeh Pyramids. Their general physiognomy was the reverse of that of the Mesopotamian palaces, but it was no less the result of the natural configuration of the country. Their architect sought to find his effect in contrast; he endeavoured to impress the spectator by the strong, not to say violent, opposition between their soaring lines and the infinite horizon of the plain. Such towers erected in a hilly country like Greece would have looked much smaller. There, they would have had for close neighbours sometimes high mountains and always boldly contoured hills and rocks; however far up into the skies their summits might be carried, they would still be dominated on one side or the other. Involuntarily the eye demands from nature the same scale of proportions as are suggested by the works of man. Where these are chiefly remarkable for their height, much of their effect will be destroyed by the proximity of such hills as Acrocorinthus or Lycabettus, to say nothing of Taygetus or Parnassus.

It is quite otherwise when the surface of the country stretches away on every side with the continuity and flatness of a lake. In these days none of the great buildings to which we have been alluding have preserved more than a half of their original height;[4] all that remains is a formless mass encumbered with heaps of *débris* at its foot, and yet, as every traveller in the country has

[1] See Herodotus, i. 181-184; and Diodorus, ii. 9.

[2] By such means M. Oppert arrives at a height of 250 Babylonian feet, or about 262 feet English for the monument now represented by the mound in the neighbourhood of Babylon known as Birs-Nimroud. *Expédition Scientifique en Mésopotamie*, vol. i. pp. 205-209, and plate 8.

[3] Ὁμολογεῖται δ' ὑψηλὸν γεγενῆσθαι καθ' ὑπερβολήν.—Diodorus, ii. 9, 4.

[4] The mound called Babil on the site of Babylon (Plate I. and Fig. 37) is now about 135 feet high, but the Birs-Nimroud, the highest of these ruins, has still an elevation of not less than 220 feet (Layard, *Discoveries*, p. 495).

remarked, these ruined monuments have an extraordinary effect upon the general appearance of the country. They give an impression of far greater height than they really possess (Fig. 36). At certain hours of the day, we are told, this illusion is very strong: in the early morning when the base of the mound is lost in circling vapours and its summit alone stands up into the clear sky above and receives the first rays of the sun; and in the evening, when the whole mass rises in solid shadow against the red and gold of the western sky. At these times it is easy to comprehend the ideas by which the Chaldæan architect was animated when he created the type of these many-storied towers and scattered them with such profusion over the whole face of the country. The chief

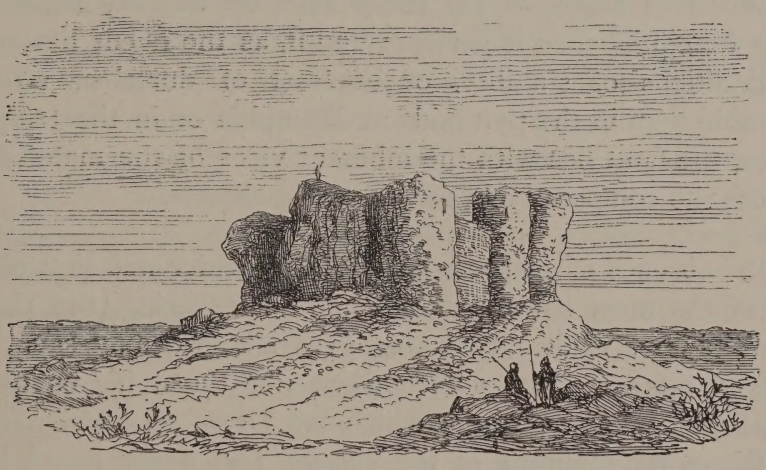


FIG. 36.—Haman, in Lower Chaldæa. From Loftus.

want of his land was the picturesque variety given by accidents of the ground to its nearest neighbours, a want he endeavoured to conceal by substituting these pyramidal temples, these lofty pagodas, as we are tempted to call them, for the gentle slopes and craggy peaks that are so plentiful beyond the borders of Chaldæa. By their conspicuous elevation, and the enormous expenditure of labour they implied, they were meant to break the uniformity of the great plains that lay about them; at the same time, they would astonish contemporary travellers and even that remote posterity for whom no more than a shapeless heap of ruins would be left. They would do more than all the writings of all the historians to celebrate the power and genius of the race that dared thus to correct and complete the work of nature.

When the king and his architect had finished one of these structures, they might calculate upon an infinite duration for it without any great presumption, and that partly because Chaldæan art, even when most ambitious and enterprising, never made use of any but the simplest means. The arch was in more frequent use than in Egypt, but it hardly seems to have been employed in buildings to which any great height was to be given. Scarcely a trace of it is to be discovered either in the parts preserved of these structures or in their sculptured representations. None of those light and graceful methods of construction that charm and excite the eye, but must be paid for by a certain loss of stability, are to be found here. Straight lines are the inflexible rule. The few arches that may be discovered in the interior exercise no thrust, surrounded as they are on every side by weighty masses. In theory the equilibrium is perfect; and if, as the event has proved, the conditions of stability, or at least of duration, were less favourable than in the pyramids at Memphis or in the temples at Thebes, the fault lies with the inherent vices of the material used and with the comparatively unfavourable climate.

In the absence of stone the Chaldæan builder was shut off from many of the most convenient methods of covering, and therefore of multiplying, voids. Speaking generally, we may say that he employed neither *piers*, nor *columns*, nor those beams of limestone, sandstone, or granite, which we know as *architraves;* he was, therefore, ignorant of the *portico*, and never found himself driven by artistic necessities to those ingenious, delicate, and learned efforts of invention by which the Egyptians and Greeks arrived at what we call *orders*. This term is well understood. By it we mean supports of which the principal parts, base, shaft, and capital, have certain constant and closely defined mutual relations. Like a zoological species, each order has a distinctive character and personal physiognomy of its own. An art that is deprived of such a resource is condemned to a real inferiority. It may cover every surface with the luxury of a sumptuous decoration, but, in spite of all its efforts, a secret poverty, a want of genius and invention, will be visible in its creations.

The varied arrangements of the portico suggested the *hypostyle hall*, with all the picturesque developments it has undergone at the hands of the Egyptians, the Greeks, the Romans, and the

people of modern Europe. In their ignorance of the pier and column, the Chaldæans were unable to give their buildings those spacious galleries and chambers which delight the eye while they diminish the actual mass of a building. Their towers were artificial mountains, almost as solid and massive from base to summit as the natural hills from which their lines were taken.[1] A few small apartments were contrived within them, near their outer edges, that might fairly be compared to caves hollowed in the face of a cliff. The weight upon the lower stories and the substructure was therefore enormous, even to the point of threatening destruction by sheer pulverisation. The whole interior was composed of crude brick, and if, as is generally supposed, those bricks were put in place before the process of desiccation was complete, the shrinkage resulting from its continuance must have had a bad effect upon the structure as a whole, especially as the position of the courses and the more or less favourable aspects of the different external faces must have caused a certain inequality in the rate at which that operation went on. The resistance would not be the same at all points, and settlements would occur by which the equilibrium of the upper stages might be compromised and the destruction of the whole building prepared.

Another danger lay in the violence of the sudden storms and the diluvial character of the winter rains. Doubtless the outsides of the walls were faced with well burnt bricks, carefully set, and often coated with an impenetrable enamel; but an inclined plane of a more or less gentle gradient wound from base to summit to give access to the latter. When a storm burst upon one of these towers, this plane became in a moment the bed of a torrent, for its outer edge would, of course, be protected by a low wall. The water would pour like a river over the sloping pavement and strike violently against each angle. Whether it were allowed to flow over the edges of the inclined plane or, as seems more probable, directed in its course so as to sweep it from top to

[1] See LAYARD'S account of his excavation in the interior of the pyramidal ruin occupying a part of the platform which now surmounts the mound of Nimroud. From two sides trenches were cut to the centre; neither of them encountered a void of any kind (*Nineveh and its Remains*, vol. ii. p. 107). At a later period further trenches were cut and the rest of the building explored (*Discoveries*, pp. 123-129). The only void of which any trace could be found was a narrow, vaulted gallery, about 100 feet long, 6 wide, and 12 high. It was closed at both ends, and appeared never to have had any means of access from without.

bottom, it must in either case have caused damage requiring continual watchfulness and frequent repairs. If this watchfulness were remitted for an instant, some of the external burnt and enamelled bricks might become detached and leave a gap through which the water could penetrate to the soft core within, and set up a process of disintegration which would become more actively mischievous with every year that passed. The present appearance of these ruins is thus, to a great extent, to be explained. Travellers in the country agree in describing them as irregular mounds, deeply seamed by the rains; and the sides against which the storms and waterspouts that devastate Mesopotamia would chiefly spend their force are those on which the damage is most conspicuous (see Fig. 37).

Even in antique times these buildings had suffered greatly. In Egypt, when the supreme power had passed, after one of those periods of decay that were by no means infrequent in her long career, into the hands of an energetic race of princes like those of the eighteenth or twenty-sixth dynasties, all traces of damage done to the public monuments by neglect or violence were rapidly effaced. The pyramids could take care of themselves. They had seen the plains at their feet covered again and again with hordes of barbarians, and yet had lost not an inch of their height or a stone of their polished cuirass. Even in the temples the setting up of a few fallen columns, the reworking of a few bas-reliefs, the restoration of a painting here and there, was all that was necessary to bring back their former splendour.

In Chaldæa the work undertaken by Nabopolassar and his dynasty was far more arduous. He had to rebuild nearly all the civil and religious buildings from their foundations, to undertake, as we know from more than one text, a general reconstruction.[1] A new Babylon was reared from the ground. Little of her former monuments remained but their foundations and materials. Temples richer than the first rose upon the lofty mounds, and, for the sake of speed, were often built of the old bricks, upon which appeared the names of forgotten kings. Nothing was neglected, no expense was spared by which the solidity of the new buildings could be increased, and yet, five or six centuries afterwards, nothing was left but ruins. Herodotus

[1] See Lenormant, *Histoire Ancienne*, vol. ii. pp. 228 and 233. Translations of several texts in which these restorations are spoken of are here given.

FIG. 37.—Babil, at Babylon. From Oppert.

seems to have seen the great temple of Bel while it was still practically intact, but Diodorus speaks of it as an edifice "which time had caused to fall,"[1] and he adds that "writers are not in accord in what they say about this temple, so that it is impossible for us to make sure what its real dimensions were." It would seem, therefore, that the upper stories had fallen long before the age of Augustus. Even Ctesias, perhaps, who is Diodorus's constant guide in all that he writes on the subject of Chaldæa and Assyria, never saw the monument in its integrity. In any case, the building was a complete ruin in the time of Strabo. "The tomb of Belus," says that accurate and well-informed geographer, "is now destroyed."[2] Strabo, like Diodorus, attributes the destruction of these buildings partly to time, partly to the avenging violence of the Persians, who, irritated by the never-ending revolts of Babylon, ruined the proudest and most famous of her temples as a punishment. That the sanctuary was pillaged by the Persians under Xerxes, as Strabo affirms, is probable enough, but we have some difficulty in believing that they troubled themselves to destroy the building itself.[3] The effort would have been too great, and, in view of the slow but sure action of the elements upon its substance, it would have been labour thrown away. The destruction of an Egyptian monument required a desperate and long continued attack, it had to be deliberately murdered, if we may use such a phrase, but the buildings of Mesopotamia, with their thin cuirasses of burnt brick and their soft bodies, required the care of an architect to keep them standing, we might say of a doctor to keep them alive, to watch over them day by day, and to stop every wound through which the weather could reach their vulnerable parts. Abandoned to themselves they would soon have died, and died natural deaths.

Materials and a system of construction such as those we have described could only result in a close style of architecture, in a style in which the voids bore but a very small proportion to the solids. And such a style was well suited to the climate.

[1] τοῦ κατασκευάσματος διὰ τοῦ χρόνου διαπεπτωκότος (ii. 9, 4).

[2] STRABO, xvi. 5.

[3] DIODORUS, after describing the treasures of the temple, confines himself to saying generally, "all this was afterwards spoiled by the king of Persia" (ii. 9, 19).

In the long and burning summers of Mesopotamia the inhabitants freely exchanged light for coolness. With few and narrow openings and thick walls the temperature of their dwellings could be kept far lower than that of the torrid atmosphere without.[1] Thus we find in the Ninevite palaces outer walls of from fifteen to five-and-twenty feet in thickness. It would have been very difficult to contrive windows through such masses as that, and they would when made have given but a feeble light. The difficulty was frankly met by discarding the use of any openings but the doors and skylights cut in the roofs. The window proper was almost unknown. We can hardly point to an

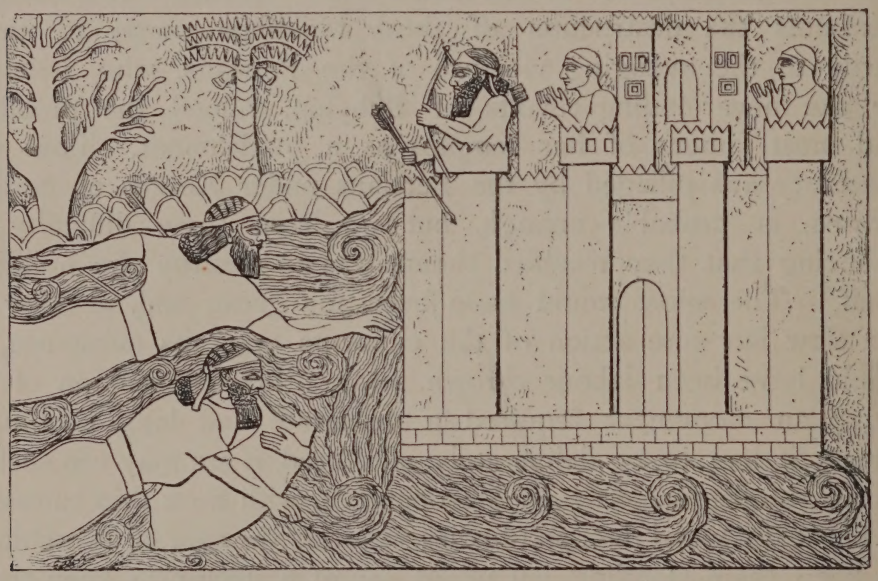


Fig. 38.—A Fortress. From Layard.

instance of its use, either among Assyrian or Chaldæan remains, or in the representations of them in the bas-reliefs. Here and there we find openings in the upper stories of towers, but they are loop-holes rather than windows (Fig. 38).[2]

[1] According to the personal experience of M. Place, the ancient arrangements were more suited to the climate of this country than the modern ones that have taken their place. The overpowering heat from which the inhabitants of modern Mossoul suffer so greatly is largely owing to the unintelligent employment of stone and plaster in the construction of dwellings. During his stay in that town the thermometer sometimes rose, in his apartments, to 51° Centigrade (90° Fahrenheit). The mean temperature of a summer's day was from 40° to 42° Centigrade (from 72° to about 76° Fahrenheit).

[2] See Layard, *Monuments of Nineveh*, 2nd series, plates 21 and 40.

At first we are inclined to pity kings shut up within such blind walls as these. But we must not be betrayed into believing that they took no measures to enjoy the evening breeze, or to cast their eyes over the broad plains at their feet, over the cities that lay under the shadows of the lofty mounds upon which their palaces were built. At certain times of the year and day they would retire within the shelter of their thickest walls and roofs; just as at the present moment the inhabitants of Mossoul, Bassorah, and Bagdad, take refuge within their *serdabs* as soon as the sun is a little high in the heavens, and stay there until the approach of evening.[1]

When the heat was less suffocating the courtyards would be pleasant, with their encircling porticoes sustaining a light covering inclined towards the centre, an arrangement required by the climate, and one which is to be found both at Pompeii and in the the Arab houses of Damascus, and is sure to have been adopted by the inhabitants of ancient Chaldæa. Additional space was given by the wide esplanades in front of the doors, and by the flat roofs, upon which sleep was often more successfully wooed than in the rooms below. And sometimes the pleasures given by refreshing breezes, cool shadows, and a distant prospect could be all enjoyed together, for in a certain bas-relief that seems to represent one of those great buildings of which we possess the ruins, we see an open arcade—a *loggia* as it would be called in Italy—rise above the roof for the whole length of the façade (Fig. 39).[2] There are houses in the neighbourhood of Mossoul in which a similar arrangement is to be met with, as we may see from Mr. Layard's sketch of a house in a village of Kurdistan

[1] The *serdab* is a kind of cellar, the walls and floor of which are drenched periodically with water, which, by its evaporation, lowers the temperature by several degrees.

[2] The town represented on the sculptured slab here reproduced is not Assyrian but Phœnician; it affords data, however, which may be legitimately used in the restoration of the upper part of an Assyrian palace. We can hardly believe that the Mesopotamian artists, in illustrating the wars of the Assyrian kings, copied servilely the real features of the conquered towns. They had no sketches by "special artists" to guide their chisels. They were told that a successful campaign had been fought in the marshes of the lower Euphrates, or in some country covered with forests of date trees, and these they had no difficulty in representing because they had examples before their eyes; so too, when buildings were in question, we may fairly conclude that they borrowed their motives from the architecture with which they were familiar.

inhabited by Nestorians (Fig. 40). It includes a modified kind of portico, the pillars of which are suggested or rather demanded by the necessity for supporting the ceiling.

Supposing such an arrangement to have obtained in Mesopotamia, of what material were the piers or columns composed? Had they been of stone their remains would surely have been found among the ruins; but no such things have ever come to light, so we may conclude that they were of timber or brick; the roof, at least, must have been wood. The joints may have been covered with protecting plates of metal by which

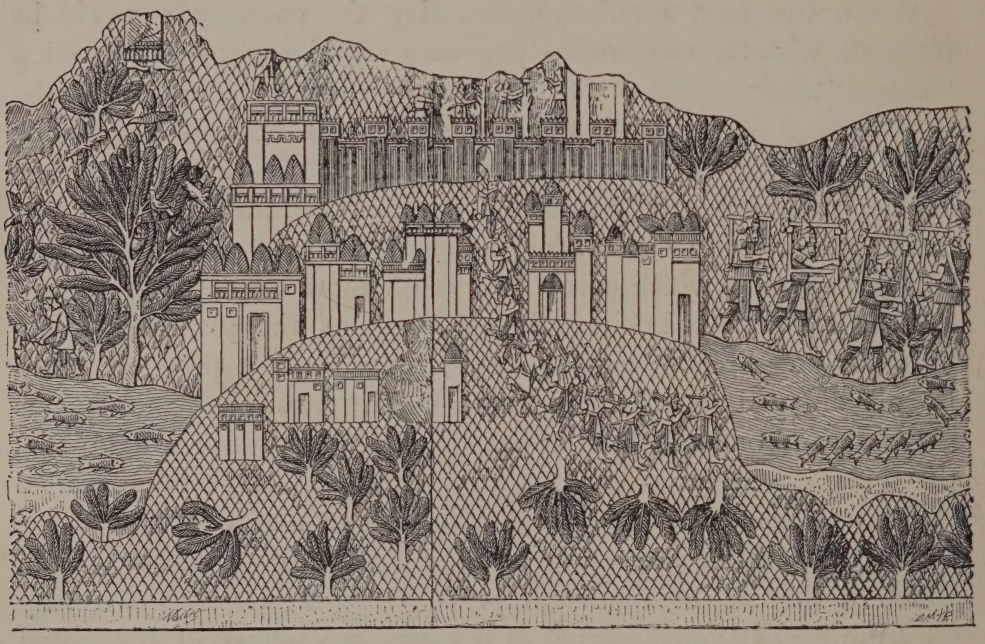


FIG. 39.—View of a Town and its Palaces. Kouyundjik. From Layard.

their duration was assured. We have a curious example of the use of these bronze sheaths in the remains of gilded palm-trees found by M. Place in front of the *harem* at Khorsabad. He there encountered a cedar trunk lying upon the ground and incased in a brass coat on which all the roughnesses of cedar bark were imitated. The leaves of doors were also protected by metallic bands, which were often decorated with bas-reliefs.

Must we conclude that stone columns were unknown in Chaldæa and Assyria? As for Chaldæa, we have no positive information in the matter, but we know that she had no building stone of her

own. The Chaldæan sculptor might indeed import a few blocks of diorite or basalt, either from Arabia, Egypt, or the valleys of Mount Zagros, for use in statues which would justify such expense; but the architect must have been restricted to the use of material close at hand. In Assyria limestone was always within reach, and yet the Assyrians never succeeded in freeing themselves from traditional methods sufficiently to make the column play a part similar to that assigned to it by the peoples of Egypt and Greece. Their habits, and especially the habit of respect for the practices and traditions of Chaldæa, were too strong for them. Their use of the column, though often tasteful and happy, is never without a certain timidity. One is inclined to think they had an inkling of the possibilities latent in it, but that they lacked

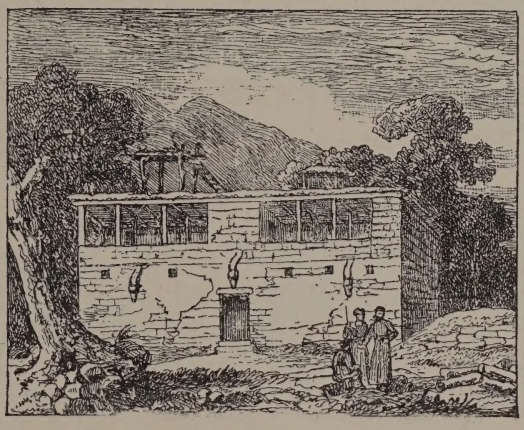


FIG. 40.—House in Kurdistan; from Layard.

the courage necessary to give it full play in the interiors and upon the façades of their large palaces and towers. In the bas-reliefs we find columns used in the kiosques built upon the river banks (Fig. 41), and in the pavilions or chapels studded over the royal gardens (Fig. 42). The excavations, moreover, have yielded pedestals and capitals which, rare as they are, have a double claim to our regard. The situations in which they have been discovered seem to show that columns were sometimes used in front of doorways, to support porches or covered ways extending to the full limits of the esplanade; secondly, their forms themselves are interesting. Close study will convince us that, when copied by neighbouring peoples who made frequent and general use of stone supports, they might well have exercised an influence

that was felt as far as the Ægæan, and had something to do with one of the fairest creations of Greek art.

We thus catch side glimpses of the column, as it were, in small buildings, in the porches before the principal doors of palaces, and in the open galleries with which some of the latter buildings were crowned (Fig. 39). In all these cases it is nothing but a more or less elegant accessory; we might if we pleased give a sufficiently full description of Mesopotamian architecture without hinting at its existence.

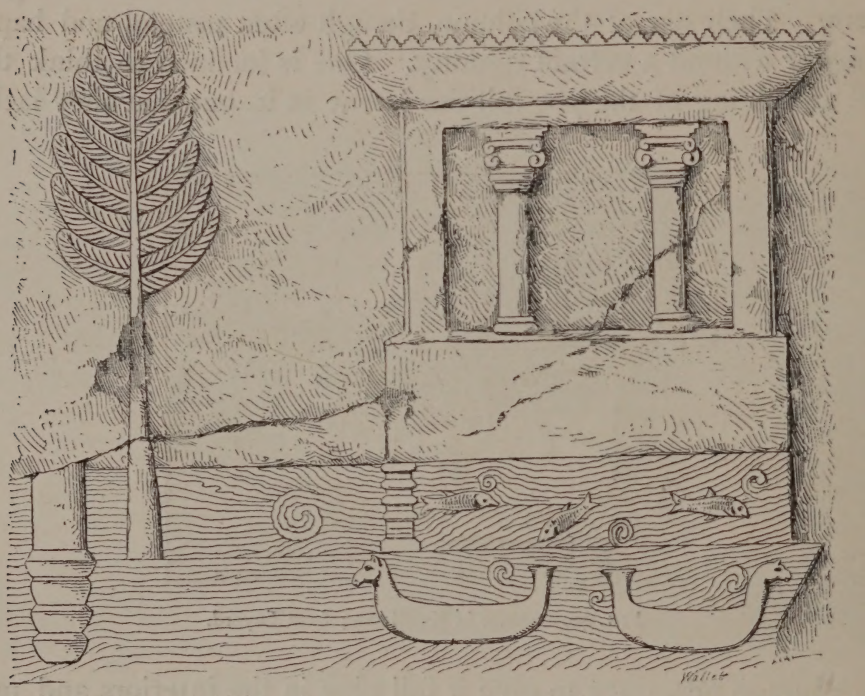


FIG. 41.—Temple on the bank of a river, Khorsabad; from Botta.

We cannot say the same of the arch, which played a much more important *rôle* than it did in Egypt. There it was banished, as we have seen, to the secondary parts of an edifice. It hardly entered into the composition of the nobler class of buildings; it was used mainly in store-rooms built near the temples, in the gateways through the outer walls of tombs, and in underground cellars and passages.[1] In Mesopotamia, on the other hand, the arch is one of the real constituent elements of the national architecture.

[1] See the *History of Art in Ancient Egypt*, vol. ii. pp. 77-84.

That the Chaldæan architects were early led to the invention of the arch is easily understood. They were unable to support the upper parts of their walls, their ceilings or their roofs, upon beams of stone or timber, and they had to devise some other means of arriving at the desired result. This means was not matured all at once. With most peoples the first stage consisted probably in those corbels or off-sets by which the width of the space to be covered was reduced course by course, till a junction was effected at the top; and sometimes this early stage may have been dispensed with. In some cases, the workman who had to cover a narrow void with small units of construction may, in trying them

FIG. 42.—Temple in a Royal Park, Kouyundjik; from the British Museum.

in various positions and combinations, have hit upon the real principle of the arch. This principle must everywhere have been discovered more or less accidentally; in one place the accident may have come sooner than in another, and here it may have been turned to more profit than there. We shall have to describe and explain these differences at each stage of our journey through the art history of antiquity, but we may at once state the general law that our studies and comparisons will bring to light. The arch was soonest discovered and most invariably employed by those builders who found themselves condemned, by the geological formation of their country, to the employment of the smallest units.

The Chaldæans were among those builders, and they made frequent use of the arch. They built no long arcades with piers or columns for supports, like those of the Romans, and that simply because such structures would have been contrary to the general principles of their architecture. They made no use, as we have already explained, of those isolated supports whose employment resulted in the hypostyle halls of Egypt and Persia, in the naves of Greek temples and Latin basilicas. The want of stone put any such arrangement out of the question. We have, then, no reason to believe that their arches ever rested upon piers or upon the solid parts of walls freely pierced for the admission of light. The type from which the modern east has evolved so many fine mosques and churches was unknown in Chaldæa. In every building of which we possess either the remains or the figured representation the archivolts rest upon thick and solid walls.

Under these conditions the vault was supreme in certain parts of the building. Its use was there so constant as to have almost the character of an unvarying law. Every palace was pierced in its substructure by drains that carried the rain water and the general waste from the large population by which it was inhabited down into the neighbouring river, and nearly all these drains were vaulted. And it must not be supposed that the architect deliberately hid his vaults and arches, or that he only used them in those parts of his buildings where they were concealed and lost in their surroundings ; they occur, also, upon the most careful and elaborate façades. The gates of cities, of palaces and temples, of most buildings, in fact, that have any monumental character, are crowned by an arch, the curve of which is accentuated by a brilliantly coloured soffit. This arch is continued as a barrel vault for the whole length of the passage leading into the interior, and these passages are sometimes very long. Vaults would also, in all probability, have been found over those narrow chambers that are so numerous in Assyrian palaces were it not for the universal ruin that has overtaken their superstructures. Finally, certain square rooms have been discovered which must have been covered with vaults in the shape of more or less flattened domes.

We must here call attention to the importance of a bas-relief belonging to the curious series of carved pictures in which

Sennacherib caused the erection of his palace at Nineveh to be commemorated. Look well at this group of buildings, which seems to rise upon a platform at the foot of a hill shaded with cypresses and fruit-laden vines (see Fig. 43). The buildings on the right have flat roofs, those on the left, and they seem the

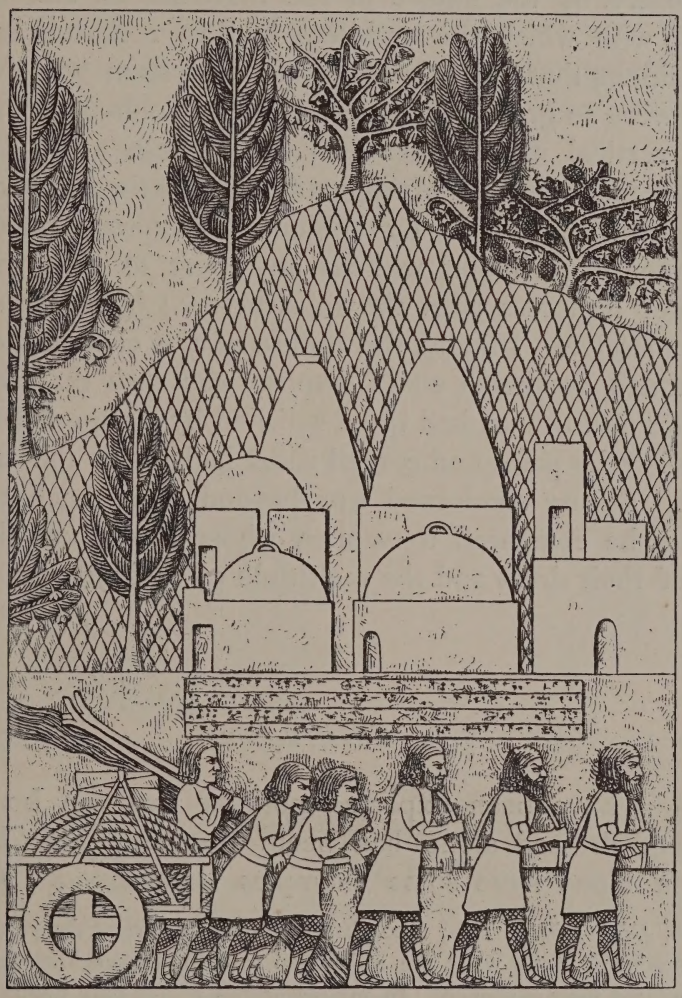


FIG. 43.—View of a group of buildings; Kouyundjik; from Layard.

most important, have, some hemispherical cupolas, and some tall domes approaching cones in shape. These same forms are still in use over all that country, not only for public buildings like baths and mosques, but even here and there for the humblest domestic structures. Travellers have been often surprised at

encountering, in many of the villages of Upper Syria and Mesopotamia, peasants' houses with sugar-loaf roofs like these.[1]

We need not here go further into details upon this point. In these general and introductory remarks we have endeavoured to point out as concisely as possible how the salient characteristics of Assyrian architecture are to be explained by the configuration of the country, by the nature of the materials at hand, and by the climate with which the architect had to reckon. It was to these conditions that the originality of the system was due; that the solids were so greatly in excess over the voids, and the lateral over the vertical measurements of a building. In this latter respect the buildings of Mesopotamia leave those of all other countries, even of Egypt, far behind. They were carried, too, to an extraordinary height without any effort to give the upper part greater lightness than the substructure; both were equally solid and massive. Finally, the nature of the elements of which Mesopotamian architects could dispose was such that the desire for elegance and beauty had to be satisfied by a superficial system of decoration, by paint and carved slabs laid on to the surface of the walls. Beauty unadorned was beyond their reach, and their works may be compared to women whose attractions lie in the richness of their dress and the multitude of their jewels.

§ 3.—*Construction.*

As might have been expected nothing that can be called a structure of dressed stone has been discovered in Chaldæa;[2] in Assyria alone have some examples been found. Of these

[1] LAYARD, *Discoveries*, p. 112; GEO. SMITH, *Assyrian Discoveries*, p. 341.

[2] The remains of stone walls are at least so rare in Lower Mesopotamia that we may disregard their existence. In my researches I have only found mention of a single example. At Abou-Sharein TAYLOR found a building in which an upper story was supported by a mass of crude brick faced with blocks of dressed sandstone. The stones of the lower courses were held together by mortar, those of the upper ones by bitumen. We have no information as to the "bond" or the size of stones used (*Journal of the Royal Asiatic Society*, vol. xv. p. 408). The materials for this revetment must have been quarried in one of those rocky hills—islands, perhaps, formerly—with which Lower Chaldæa is sparsely studded. TAYLOR mentions one seven miles west of Mougheir, in the desert that stretches away towards Arabia from the right bank of the Euphrates (*Journal*, &c. vol. xv. p. 460).

the most interesting, and the most carefully studied and described are the walls of Sargon's palace at Khorsabad.

Even there stone was only employed to case the walls in which the mound was inclosed—a cuirass of large blocks carefully dressed and fixed seemed to give solidity to the mass, and at the same time we know by the arrangement of the blocks that the outward appearance of the wall was by no means lost sight of. All those of a single course were of one height but of different depths and widths, and the arrangement followed a regular order like that shown in Fig. 46. Their external face was carefully dressed.[1]

The courses consist, on plan, of "stretchers" and "headers." We borrow from Place the plan of an angle (Fig. 44), a section

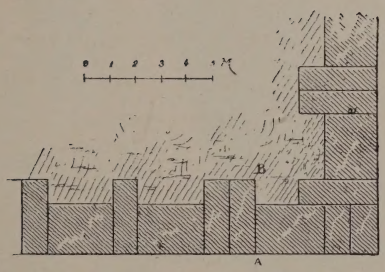


FIG. 44.—Plan of angle, Khorsabad; from Place.

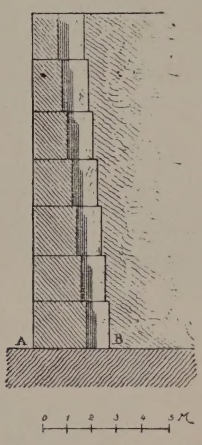


FIG. 45.—Section of wall through AB in Fig. 44; from Place.

(Fig. 45), and an elevation (Fig. 46). Courses are always horizontal and joints properly bound. The freestone blocks at the foot of the wall are very large. The stretchers are six feet eight inches thick, the same wide, and nine feet long. They weigh about twenty-three tons. It is astonishing to find the Assyrians, who were very rapid builders, choosing such heavy and unmanageable materials.

The supporting wall became gradually thinner towards the top, each course being slightly set back from the one below it on the inner face (see Fig. 45). This arrangement is general with

[1] We shall here give a *résumé* of M. PLACE'S observations (*Ninive et l'Assyrie*, vol. i. pp. 31-34).

these retaining-walls. The average diminution is from seven to ten feet at the base, to from three to six at the top.

The constructor showed no less skill in the use he made of his stretchers and headers. They not only gave him an opportunity of safely diminishing the weight of his structure and economising his materials, they afforded a ready means of adapting his wall exactly to the work it had to do. The headers penetrated farther into the crude mass within than the stretchers, and gave to the junction of the two surfaces a solidity similar to that derived by a wall from its through stones or perpenders.

In describing this wall, M. Place also calls attention to the care with which the angles are built. "The first course," he says, 'is composed of three 'headers' with their shortest side outwards

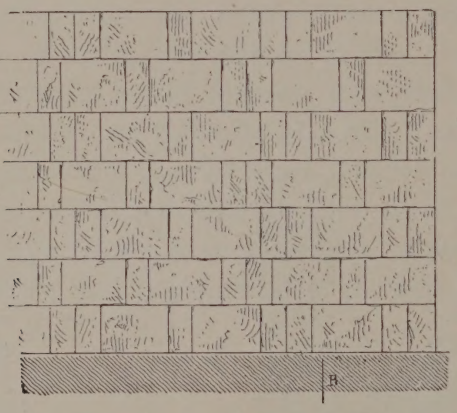


Fig. 46.—Elevation of wall, Khorsabad; from Place.

and their length engaged in the mass behind. Two of these stones lie parallel to each other, the third crosses their inner extremities."[1] Thanks to this ingenious arrangement, the weakest and most exposed part of the wall is capable of resisting any attack.

The surface in contact with the core of crude brick was only roughly dressed, by which means additional cohesion was given to the junction of the two materials; but the other sides were carefully worked and squared and fixed in place by simple juxtaposition. The architect calculated upon sufficient solidity being given by the mere weight of the stones and the perfection of their surfaces.[2]

[1] Place, *Ninive*, &c. vol. i. p.

[2] *Ibid.* p. 33.

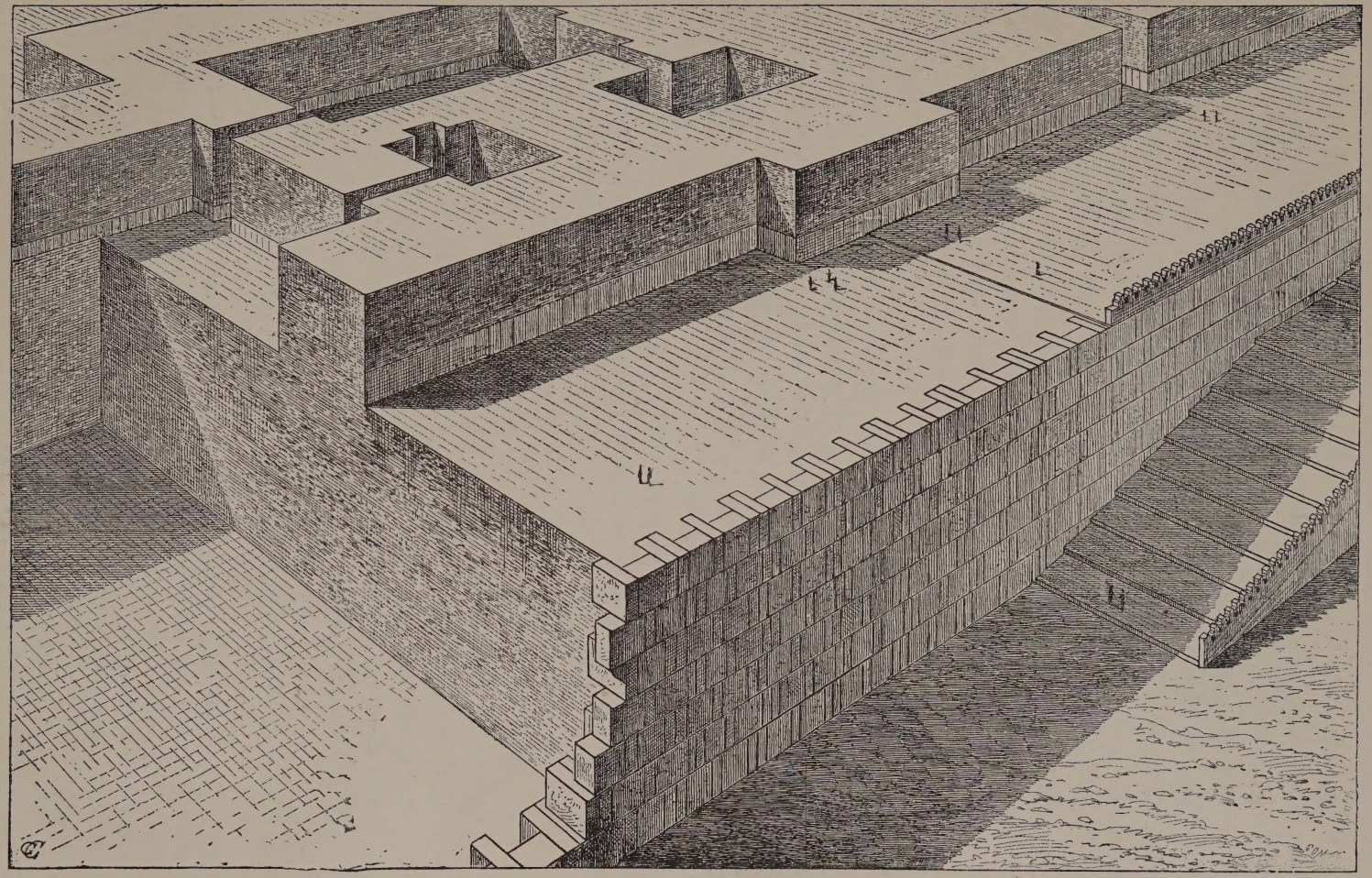


FIG. 47.—Section in perspective through the south-western part of Sargon's palace at Khorsabad; compiled from Place.

The total height of this Khorsabad wall was sixty feet—nine feet for the foundations, forty-six for the retaining-wall, and five for the parapet, for the wall did not stop at the level of the roofs. A row of battlements was thought necessary both as a slight fortification and as an ornament.[1] These were finished at the top with open crenellations in brick, along the base of which ran apparently a frieze of painted rosettes. A reference to our Fig. 47 will explain all these arrangements better than words. It is a bird's-eye view in perspective of the south-western part of the palace. The vertical sections on the right of the engraving show how the stones were bonded to the crude brick. The crenellations are omitted here, but they may be seen in place on the left.

The great size of the stones and the regularity of the masonry, the height of the wall and the long line of battlements with which it was crowned, the contrast between the brilliant whiteness of its main surface and the bright colours of the painted frieze that, we have supposed, defined its summit—all this made up a composition simple enough, but by no means devoid of beauty and grandeur.

In the *enceinte* surrounding the town, stone was also employed, but in a rather different fashion. It was used to give strength to the foot of the wall, which consisted of a limestone plinth nearly four feet high, surmounted by a mass of crude brick, rising to a total height of about forty-four feet. Its thickness was eighty feet. The bed of stone upon which the brick rested was made up of two retaining walls with a core of rubble. In the former, large blocks, carefully dressed and fixed, were used; in the latter, pieces of broken stone thrown together pell-mell, except towards the top, where they were so placed as to present a smooth surface, upon which the first courses of brick could safely rest.[2]

When Xenophon crossed Assyria with the "ten thousand," he

[1] In every country in which buildings have been surmounted by flat roofs, this precaution has been taken—"When thou buildest a new house, then thou shalt make a battlement for thy roof, that thou bring not blood upon thine house, if any man fall from thence *Deuteronomy* xxii. 8). See also *Les Monuments en Chaldée, en Assyrie et à Bab. n, d'après les récentes découvertes archéologique, avec neuf planches lithographiés*, 8vo, by H. CAVANIOL, published in 1870 by Durand et Pedone-Lauriel. It contains a very good *résumé*, especially in the matter of architecture, of those labours of French and English explorers to which we owe our knowledge of Chaldæa and Assyria.

[2] PLACE, *Ninive et l'Assyrie*, vol i. p. 64.

noticed this method of constructing city walls, but in all the *enceintes* that attracted his attention, the height of the plinth was much greater than that of Khorsabad. At Larissa it was twenty, and at Mespila fifty feet, or respectively a fifth and a third of the total height of the walls.[1] These figures can only be looked upon as approximate. The Greeks did not amuse themselves, we may be sure, with measuring the monuments they encountered on their march, even if Tissaphernes gave them time. But we may fairly conclude from this evidence that in some of the Assyrian town-walls the proportion between the plinth and the superstructure was very different from what it is in the only example that has come down to us.

At Khorsabad, then, stone played a much more important part in the palace wall than in that of the town, but even in the latter position it is used with skill and in no inconsiderable quantity; on the other hand, it is only employed in the interior of the palace for paving, for lining walls, for the bases, shafts and capitals of columns, and such minor purposes. In the only palace that has been completely excavated, that of Sargon at Khorsabad, everything is built of brick. Layard alone speaks of a stone-built chamber in the palace of Sennacherib at Kouyundjik, but he gives no details.

It would seem as if the Assyrians were content with showing themselves passed-masters in the art of dressing and fixing stone, and, that proof given, had never cared to make use of the material in the main structures of their buildings. Like the Chaldæans, they preferred brick, into the management of which, however, they introduced certain modifications of their own. The crude brick of Nineveh and its neighbourhood was used while damp, and, when put in place, did not greatly differ from pisé.[2] Spread out in wide horizontal courses, the slabs of soft clay adhered one to another by their plasticity, through the effect of the water with which they were impregnated and that of the

[1] XENOPHON, *Anabasis*, iii. 4, 7-11. The identity of Larissa and Mespila has been much discussed. Oppert thinks they were Resen and Dour-Saryoukin; others that they were Calech and Nineveh. The question is without importance to our inquiry. In any case the circumference of six parasangs (about 20½ miles) ascribed by the Greek writer to his Mespila can by no means be made to fit Khorsabad.

[2] See the *History of Art in Ancient Egypt*, vol. i. p. 113.

pressure exercised by the courses above.[1] The building was thus, in effect, nothing but a single huge block. Take it as a whole, put aside certain parts, such as the doorways and drains, that were constructed on rather different principles, shut your eyes to the merely decorative additions, and you will have a huge mass of kneaded earth which might have been shaped by giants in a colossal mould.

The masons of Babylon and of other southern cities made a much more extensive use of burnt brick than those of the north. In Assyria the masses of pisé have as a rule no other covering than the slabs of alabaster and limestone, and above, a thin layer of stucco. In Chaldæa the crude walls of the houses and towers were cuirassed with those excellent burnt bricks which the inhabitants of Bagdad and Hillah carry off to this day for use in their modern habitations.[2] The crude bricks used behind this protecting epidermis have not lost their individuality, as at Nineveh they seem to have been used only after complete dessication. They are of course much more friable than those burnt in the kiln; when they are deprived of their cuirass and exposed to the weather they return slowly to the condition of dust, and their remains are seen in the sloping mounds that hide the foot of every ancient ruin (see Fig. 48), and yet if you penetrate into the interior of a mass built of these bricks, you will easily distinguish the courses, and in some instances the bricks have sufficient solidity to allow of their being moved and detached one from another. They are, in fact, bricks, and not pisé. But in Chaldæa, as in Assyria, the mounds upon which the great buildings were raised

[1] BOTTA tells us how the courses of crude brick were distinguished one from another at Khorsabad (*Monuments de Ninive*, vol. v. p. 57).

[2] Speaking of Hillah, GEORGE SMITH tells us (*Assyrian Discoveries*, p. 62):—"A little to the south rose the town of Hillah, built with the bricks found in the old capital. The natives have established a regular trade in these bricks for building purposes. A number of men are always engaged in digging out the bricks from the ruins, while others convey them to the banks of the Euphrates. There they are packed in rude boats, which float them down to Hillah, and on being landed they are loaded on donkeys and taken to any place where building is in progress. Every day when at Hillah I used to see this work going on as it had gone on for centuries, Babylon thus slowly disappearing without an effort being made to ascertain the dimensions and buildings of the city, or to recover what remains of its monuments. The northern portion of the wall, outside the Babil mound, is the place where the work of destruction is now (1874) most actively going on, and this in some places has totally disappeared."

are not always of crude brick. They are sometimes made by inclosing a large space by four brick walls, and filling it with earth and the various *débris* left by previous buildings.[1] Our remarks upon construction must be understood as applying to the buildings themselves, and not to the artificial hills upon which they stood.

The Assyrians seem never to have used anything analogous to our mortar or cement in fixing their materials. On the comparatively rare occasions when they employed stone they were content with dressing their blocks with great care and putting them in absolute juxtaposition with one another. When they used crude brick, sufficient adherence was insured by the moisture left

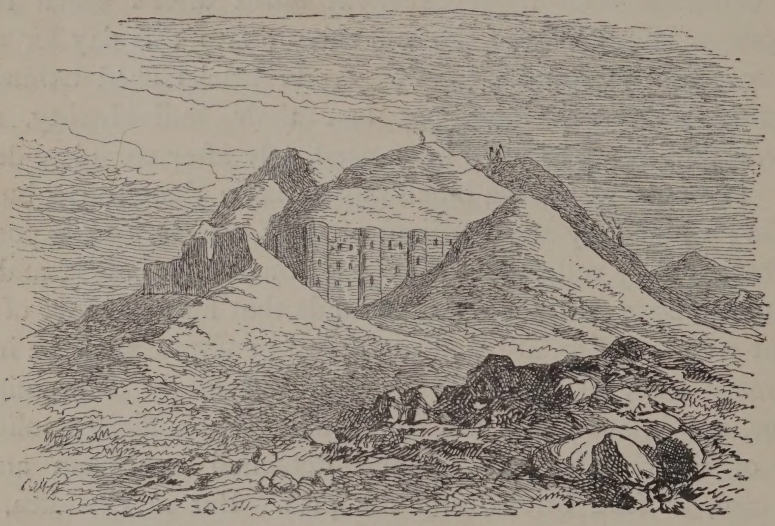


FIG. 48.—Temple at Mugheir; from Loftus.

in the clay, and by its natural properties. Even when they used burnt or well dried bricks they took no great care to give them a cohesion that would last, ordinary clay mixed with water and a little straw, was their only cement.[2] Even in our own day the masons and bricklayers of Mossoul and Bagdad are content with the same simple materials, and their structures have no great solidity in consequence.

In Chaldæa, at least in certain times and at certain places, construction was more careful. In the ruin known as *Babil*, a ruin

[1] LAYARD, *Discoveries*, &c. p. 110.

[2] LAYARD, *Nineveh*, vol. ii. p. 279. "The bricks had no mortar but the mud from which they had been made," says BOTTA (*Monuments de Ninive*, vol. v. p. 30).

F. Thomas del.

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BABYLON

FROM AN UNPUBLISHED DRAWING BY FELIX THOMAS

that represents one of the principal monuments of ancient Babylon, there is nothing between the bricks but earth that must have been placed there in the condition of mud.[1] These bricks may be detached almost without effort. It is quite otherwise with the two other ruins in the same neighbourhood, called respectively *Kasr* and *Birs-Nimroud*. Their bricks are held together by an excellent mortar of lime, and cannot be separated without breaking.[2] Elsewhere, at Mugheir for instance, the mortar is composed of lime and ashes.[3]

Finally, the soil of Mesopotamia furnished, and still furnishes, a kind of natural mortar in the bituminous fountains that spring through the soil at more than one point between Mossoul and Bagdad.[4] It is hardly ever used in these days except in boat-building, for coating the planks and caulking. In ancient times its employment was very general in the more carefully constructed buildings, and, as it was found neither in Greece nor Syria, it made a great impression upon travellers from those countries. They noted it as one of the characteristics of Chaldæan civilization. In the Biblical account of the Tower of Babel we are told: "They had brick for stone, and slime had they for mortar."[5] Herodotus lays stress upon the same detail in his description of the way in which the walls of Babylon were built: "As they dug the ditches they converted the excavated earth into bricks, and when they had enough, they burnt them in the kiln. Finally, for mortar they used hot bitumen, and at every thirty courses of bricks they put a layer of reeds interlaced."[6]

Those walls have long ago disappeared. For many centuries their ruins afforded building materials for the inhabitants of the cities that have succeeded each other upon and around the site of ancient Babylon, and now their lines are only to be faintly traced in slight undulations of the ground, which are here and there

[1] LAYARD, *Discoveries*, &c. p. 503.

[2] LAYARD, *Discoveries*, pp. 499 and 506.

[3] TAYLOR, *Notes on the Ruins of Mugeyr* (*Journal of the Royal Asiatic Society*, vol. xv. p. 261). This mortar is still employed in the country; it is called *kharour*.

[4] The most plentiful springs occur at Hit, on the middle Euphrates. They are also found, however, farther north, as at Kaleh-Shergat, near the Tigris. Over a wide stretch of country in that district the bitumen wells up through every crack in the soil (LAYARD, *Nineveh*, vol. ii. p. 46). As for the bituminous springs of Hammam-Ali, near Mossoul, see PLACE, *Ninive et l'Assyrie*, vol. i. p. 236.

[5] *Genesis* xi. 3.

[6] HERODOTUS, i. 179.

hardly distinguishable from the banks that bordered the canals. But in those deserts of Lower Chaldæa, where the nomad tent is now almost the only dwelling, structures have been found but little damaged, in which layers of reeds placed at certain intervals among the bricks may be easily distinguished. As a rule three or four layers are strewn one upon the other, the rushes in one being at right angles to those above and below it. Here and there the stalks may still be seen standing out from the wall.[1] Fragments of bitumen are everywhere to be picked up among the *débris* about these buildings, upon which it must have been used for mortar. It never seems to have been employed, however, over the whole of a building, but only in those parts where more than the ordinary cohesive power was required. Thus, at Warka, in the ruin called *Buvariia*, the buttresses that stand out from the main building are of large burnt bricks set in thick beds of bitumen, the whole forming such a solid body that a pickaxe has great difficulty in making any impression upon it.[2]

Travellers have also found traces of the same use of bitumen in the ruins of Babylon. It seems to have been in less frequent employment in Assyria. It has there been found only under the two layers of bricks that constitute the ordinary pavement of roofs, courts, and chambers. The architect no doubt introduced this coat of asphalte for two purposes—partly to give solidity to the pavement, partly to keep down the wet and to force the water in the soil to flow off through its appointed channels. A layer of the same kind was also spread under the drains.[3]

In spite of all their precautions time and experience compelled the inhabitants of Mesopotamia to recognize the danger of crude brick as a building material; they endeavoured, therefore, to supplement its strength with huge buttresses. Wherever the ruins have still preserved some of their shape, we can trace, almost

[1] *Warkah, its Ruins and Remains*, by W. Kenneth Loftus, p. 9. (In the *Transactions of the Royal Society of Literature*, second series, Part I.) According to Sir Henry Rawlinson this introduction of layers of reeds or rushes between the courses of brick continued in all this region at least down to the Parthian epoch. Traces of it are to be found in the walls of Seleucia and Ctesiphon (Rawlinson's *Herodotus*, vol. i. p. 300 note 1).

[2] Loftus, *Travels and Researches*, i. p. 169. The abundance of bitumen in the ruins of Mugheir is such that the modern name of the town has sprung from it; the word means *the bituminous* (Taylor, *Notes on the Ruins of Mugeyr*).

[3] Place, *Ninive et l'Assyrie*, vol. i. p. 236; Layard, *Nineveh*, vol. ii. p. 261.

without exception, the presence of these supports, and, as a rule, they are better and more carefully built than the structures whose walls they sustain. Their existence has been affirmed by every traveller who has explored the ruins of Chaldæa,[1] and in Assyria they are also to be found, especially in front of the fine retaining wall that helps to support the platform on which the palace of Sargon was built.[2] The architect counted upon the weight of his building, and upon these ponderous buttresses, to give it a firm foundation and to maintain the equilibrium of its materials. As a rule there were no foundations, as we understand the word. At *Abou-Sharein*, in Chaldæa, the monument described by Taylor and the brick pavement that surrounds it are both placed upon the sand.[3] Botta noticed something of the same kind in connection with the palace walls at Khorsabad: "They rest," he says, "upon the very bricks of the mound without the intervention of any plinth or other kind of solid foundation, so that here and there they have sunk below the original level of the platform upon which they are placed."[4]

This was not due to negligence, for in other respects these structures betray a painstaking desire to insure the stability of the work, and no little skill in the selection of means. Thus the Chaldæan architect pierced his crude brick masses with numerous narrow tunnels, or ventilating pipes, through which the warm and desiccating air of a Mesopotamian summer could be brought into contact with every part, and the slight remains of moisture still left in the bricks when fixed could be gradually carried off. These shafts have been found in the ruins of Babylon and of other Chaldæan cities.[5] Nothing of the kind has been discovered in Assyria, and for a very simple reason. It would have been

[1] LOFTUS, *Warka, its Ruins*, &c. p. 10.

[2] PLACE, *Ninive*, vol. i. pp. 29 and 248.

[3] TAYLOR, *Notes on Abou-Shahrein and Tell-el-Lahm* (*Journal of the Royal Asiatic Society*, vol. xv. p. 408).

[4] BOTTA, *Monument de Ninive*, vol. v. p. 58.

[5] NIEBUHR (*Voyage en Arabie*, vol. ii. p. 235) noticed this, and his observations have since been confirmed by many other visitors to the ruins of Babylon. KER PORTER (vol. ii. p. 391) noticed them in the ruins of Al-Heimar. See also TAYLOR on "*Mugeyr*," &c. (*Journal*, &c. vol. xv. p. 261). At Birs-Nimroud these conduits are about nine inches high and between five and six wide. They are well shown in the drawing given by FLANDIN and COSTE of this ruin (*Perse ancienne et moderne*, pl. 221, cf. text 1, p. 181).

impossible to preserve them in the soft paste, the kind of pisé, we have described.

Another thing that had to be carefully provided for was the discharge of the rain water which, unless it had proper channels of escape, would filter through the cracks and crevices of the brick and set up a rapid process of disintegration. In the Assyrian palaces we find, therefore, that the pavements of the flat roofs of the courtyards and open halls had a decided slope, and that the rain water was thus conducted to scuppers, through which it fell into runnels communicating with a main drain, from which it was finally discharged into the nearest river.

It rained less in Chaldæa than in Assyria. But we may fairly conclude that the Chaldæan architects were as careful as their northern rivals to provide such safeguards as those we have described; but their buildings are now in such a condition that no definite traces of them are to be distinguished. On the other hand, the ruins in Lower Chaldæa prove that even in the most ancient times the constructor had then the same object in view; but the means of which he made use were much more simple, although contrived with no little ingenuity. We shall here epitomize what we have learnt from one of those few observers to whom we owe all our knowledge of the earliest Chaldæan civilization.

Mr. J. E. Taylor, British vice-consul at Bassorah, explored not a few of the mounds in the immediate neighbourhood of the Persian Gulf which mark the sites of the burying places belonging to the most ancient cities of Chaldæa.

The summits of these mounds are paved with burnt brick; their mass consists of heaped up coffins separated from one another by divisions of the same material. To insure the preservation of the bodies and of the objects buried with them liquids of every kind had to be provided with a ready means of escape. The structures were pierced, therefore, with a vast number of vertical drains. Long conduits of terra-cotta (see Fig. 49) stretched from the paved summit, upon which they opened with very narrow mouths, to the base. They were composed of tubes, each about two feet long and eighteen inches in diameter. In some cases there are as many as forty of these one upon another. They are held together by thin coats of bitumen, and in order to give them greater strength their sides are slightly concave.

Their interiors are filled in with fragments of broken pottery, which gave considerable support while they in no way hindered the passage of the water. These potsherds are even placed around the outsides of the tubes, so that the latter are nowhere in contact with the brick; they have a certain amount of play, and with the tubes which they encase they form a series of shafts, like chimneys, measuring about four feet square. Every precaution was taken to carry off the water left by the storms. They were not contented with the small opening at the head of each tube. The whole of its dome-shaped top was pierced with small holes, that made it a kind of cullender. Either through this or through the interstices of the potsherd packing, all the moisture that escaped the central opening would find a safe passage to the level

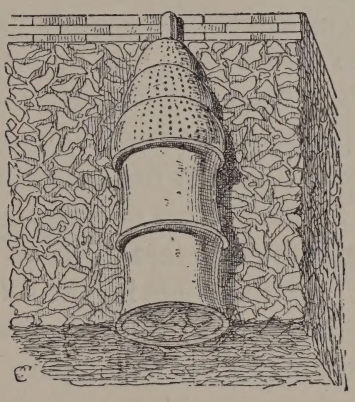


FIG. 49.—Upper part of the drainage arrangements of a mound.

of the ground, whence, no doubt, it would be carried off to the streams in conduits now hidden by the mass of *débris* round the foot of every mound.

That these arrangements were well adapted to their purpose has been proved by the result. Thanks to the drains we have described, these sepulchral mounds have remained perfectly dry to the present day. Not only the coffins, with the objects in metal or terra-cotta they contained, but even the skeletons themselves have been preserved intact. A touch will reduce the latter to powder, but on the first opening of their coffins they look as if time had had no effect upon their substance.[1]

By these details we may see how far the art of the constructor

[1] TAYLOR, *Notes on the Ruins of Mugeyr* (*Journal of the Royal Asiatic Society*), vol. xv. pp. 268-269.

was pushed in the early centuries of the Chaldæan monarchy. They excite a strong desire in us to discover the internal arrangements of his buildings, the method by which access was given or forbidden to those chambers of the Babylonian temples and houses whose magnificence has been celebrated by every writer that saw them before their ruin. Unhappily nothing has come down to us of the monuments of Chaldæa, and especially of those of Babylon, but their basements and the central masses of the staged towers. The Assyrian palaces are indeed in a better state of preservation, but even in their case we ask many questions to which no certain answer is forthcoming.

The great difficulty in all our researches and attempts at restoration, is caused by the complete absence of any satisfactory evidence as to the nature of the roofs that covered rooms, either small or large. In most cases the walls are only standing to a height of from ten to fifteen feet ;[1] in no instance has a wall with its summit still in place been discovered.

The cut on the opposite page (Fig. 50) gives a fair idea of what a Ninevite building looks like after the excavators have finished their work. It is a view in perspective of one of the gates of Sargon's city : the walls are eighty-eight feet thick, to which the buttresses add another ten feet ; their average height is from about twenty-five to thirty feet, high enough to allow the archway by which the city was entered to remain intact. This is quite an exception. In no part of the palace is there anything to correspond to this happy find of M. Place—any evidence by which we can decide the forms of Assyrian doorways. The walls are always from about twelve to twenty-eight feet in thickness (see Fig. 46.) Rooms are rectangular, sometimes square, but more often so long as to be galleries rather than rooms in the ordinary sense of the word.

The way in which these rooms were covered in has been much discussed. Sir Henry Layard believes only in flat roofs, similar to those of modern houses in Mossoul and the neighbouring villages. He tells us that he never came upon the slightest trace of a vault, while in almost every room that he excavated he found wood ashes and carbonized timber.[2] He is convinced that the destruction

[1] At Khorsabad the average height of the alabaster lining is about ten feet; above that about three feet of brick wall remains.

[2] Layard, *Nineveh*, vol. i. pp. 127 and 350 ; vol. ii. pp. 40 and 350. As to the traces of fire at Khorsabad, see Botta, *Monument de Ninive*, vol. v. p. 54.

of several of these buildings was due in the first instance to fire. Several pieces of sculpture, those from the palace of Sennacherib, for instance, may be quoted, which when found were black with soot. They look like castings in relief that have been long fixed at the back of a fire-place.

Long and narrow rooms may have been roofed with beams of palm or poplar resting upon the summits of the walls. As for the large halls, in the centre they would be open to the sky, while around the opening would run a portico, similar to that of a Roman atrium, whose sloping roof would protect the reliefs with which the walls were ornamented.[1]

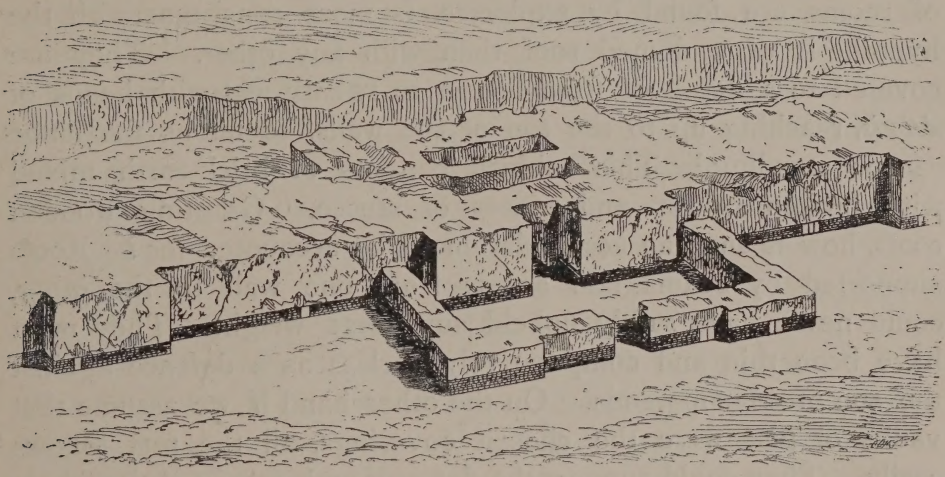


FIG. 50.—Present state of one of the city gates, Khorsabad. Perspective compiled from Place's plans and elevations.

As to this, however, doubt had already been expressed by an attentive and judicial observer like Loftus; who thought that the arch had played a very important part in the architecture of Mesopotamia.[2] As he very justly remarked, the conditions were rather different from those that obtained in the maritime and mountainous provinces of Persia; there was no breeze from the gulf or from the summits of snowy mountains, to which every facility for blowing through their houses and cooling their heated chambers had to be given; the problem to be solved was how best to oppose an impenetrable shield against a daily and long continued heat that would otherwise

[1] LAYARD, *Nineveh*, vol. ii. pp. 256-264.
[2] LOFTUS, *Travels and Researches*, pp. 181-183.

have been unbearable. Now it is clear that a vault with its great powers of resistance would have been far better fitted to support a roof whose thickness should be in some reasonable proportion to the massive walls, than a ceiling of bad timber. In our day the mosques, the baths, and many of the private houses of Mossoul and Bagdad have dome-shaped roofs. Without going as far as Mesopotamia, the traveller in Syria may see how intelligently, even in the least important towns, the native builder has employed a small dome built upon a square, to obtain a strong and solid dwelling entirely suited to the climate, a dwelling that should be warm in winter and cool in summer.

We must also point out that the state in which the interiors of rooms are found by explorers, is more consistent with the hypothesis of a domed roof than with any other. They are covered to a depth of from fifteen to twenty feet with heaps of *débris*, reaching up to the top of the walls, so far as the latter remain standing.[1] This rubbish consists of brick-earth mixed with broken bricks, and pieces of stucco. Granting wooden roofs, how is such an accumulation to be accounted for? Roofs supported by beams laid across from one wall to the other, could never have safely upheld any great weight. They must have been thin and comparatively useless as a defence against the sun of Mesopotamia. On the other hand if we assume that vaults of pisé were the chosen coverings, all the rest follows easily. They could support the flat roof with ease, and the whole upper structure could be made of sufficient thickness to exclude both the heat and the rain, while the present appearance of the ruins is naturally accounted for.

Those who have lived in the East, those, even, who have extended a visit to Athens as far as Eleusis or Megara, must have stretched themselves, more than once, under the stars, and, on the flat roofs of their temporary resting-places, sought that rest that was not to be found in the hot and narrow chambers within. They must then have noticed, as I have more than once, a large stone cylinder in one corner. In Greece and Asia Minor, it will be in most cases a "drum" from some antique column, or a funerary *cippus*, abstracted by the peasantry from some neighbouring ruin. This morsel of Paros or Pentelic has to perform

[1] This accumulation has sometimes reached a height of about 24 feet. Place, *Ninive*, vol. i. p. 294.

the office of a roller. When some heavy fall of rain by wetting and softening the upper surface of the terrace, gives an opportunity for repairing the ravages of a long drought, the stone is taken backwards and forwards over the yielding pisé. It closes the cracks, kills the weeds that if left to themselves would soon transform the roof into a field, and makes the surface as firm as a threshing-floor.

The roofs of Assyrian buildings must have required the same kind of treatment, and we know that in the present day it is actually practised. M. Place mentions rollers of lime-stone, weighing from two to three hundredweight, pierced at each end with a square hole into which wooden spindles were inserted to faciliate their management.[1] A certain number of these rollers were found within the chambers, into which they must have fallen with the roofs. As soon as the terraces ceased to receive the care necessary for keeping down the weeds and shrubs and keeping out the water, the process of disintegration must have been rapid. The rains would soon convert cracks into gaping breaches, and at the end of a few years, every storm would bring down a part of the roof. A century would be enough to destroy the vaults, and with them the upper parts of the walls to which they were closely allied by the skill of the constructor. The disappearance of the archivolts and the great heaps of *débris* are thus accounted for. The roof materials were too soft, however, to damage in their fall the figures in high relief or in the round that decorated the chambers beneath, or the carved slabs with which their walls were lined. In spreading itself about these sculptures and burying them out of sight and memory, the soft clay served posterity more efficiently than the most careful of packers.

Among the first observers to suspect the truth as to the use of the vault in Mesopotamia, were Eugène Flandin, who helped Botta to excavate the palace of Sargon,[2] and Felix Thomas,[3] the colleague of M. Place. The reasons by which M. Thomas was led to the conclusion that the rooms in the Ninevite palaces

[1] PLACE, *Ninive*, vol. i. pp. 293-294.

[2] E. FLANDIN, *Voyage archéologique à Ninive.* 1. *L'Architecture assyrienne.* 2. *La Sculpture assyrienne* (*Revue des Deux-Mondes*, June 15 and July 1, 1845).

[3] For all that concerns this artist, one of the most skilful draughtsmen of our time, see the biographical notice of M. de Girardot:—*Felix Thomas, grand Prix de Rome Architecte, Peintre, Graveur, Sculpteur* (Nantes, 1875, 8vo.).

were vaulted, are thus given by M. Place, who may be considered his mouthpiece.[1]

He does not deny that some of the Khorsabad reliefs bear the marks of fire, but he affirms, and that after the experience of four digging campaigns, that the conflagration was much less general than might be supposed from the statements of some travellers. He failed to discover the slightest trace of fire in the hundred and eighty-four rooms and twenty-eight courts that he excavated. The marvellous preservation of the reliefs in many of the halls is inconsistent, in his opinion, with the supposition that the palace was destroyed by fire; and if we renounce that supposition the mere action of time is insufficient to account for the disappearance of such an extent of timber roofing, for here and there, especially near the doorways, pieces of broken beams and door panels have

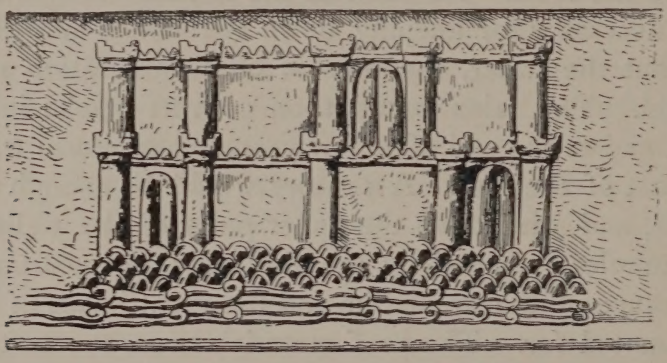


Fig. 51.—Fortress; from the Balawat gates, in the British Museum.

been found. "The wood is not all in such condition as the incorruptible cedar of the gilded palm-trees, but wherever it certainly existed, traces of it may be pointed out. In advanced decomposition it is no more consistent than powder, it may be picked up and thrown aside, leaving a faithful cast of the beam or post to which it belonged in the more tenacious clay."

All this, however, was but negative evidence. The real solution of the problem was first positively suggested by the discovery of vaults in place, in the drains and water channels, and in the city gates. The bas-reliefs in which towns or fortresses are represented also support the belief that great use was made of arched openings in Assyria, and the countries in its neighbourhood (see Fig. 51). As soon as it is proved that the Assyrians understood the principle

[1] Place, *Ninive*, vol. i. pp. 249-269.

of the arch, why should it any longer be denied that they made use of it to cover their chambers? It is obvious that a vault would afford a much better support for the weight above than any timber roof.

In the course of the explorations, a probable conjecture was changed into complete certainty. The very vaults for which inductive reasoning had shown the necessity were found, if not in place, at least in a fragmentary condition, and in the very rooms to which they had afforded a cover—and here we must quote the words of the explorers themselves.

In the most deeply buried quarters of the building, the excavations were carried on by means of horizontal tunnels or shafts. "I was often obliged," says M. Place, "to drive trenches from one side of the rooms to another in order to get a clear idea of their shape and arrangement. On these occasions we often met with certain hard facts, for which, at the time, we could give no explanation. These facts were blocks of clay whose under sides were hollowed segmentally and covered with a coat of stucco. These fragments were found sometimes a few feet from the walls, sometimes near the middle of the rooms. At first I was thoroughly perplexed to account for them. Our trenches followed scrupulously the inner surfaces of the walls, which were easily recognizable by their stucco when they had no lining of carved slabs. What then were we to make of these arched blocks, also coated with stucco, but found in the centre of the rooms and far away from the walls? Such signs were not to be disregarded in an exploration where everything was new and might lead to unforeseen results. Wherever a trace of stucco appeared I followed it up carefully. Little by little the earth under and about the stuccoed blocks was cleared away, and then we found ourselves confronted by what looked like the entrance to an arched cellar. Here and there these portions of vaulting were many feet in length, from four to six in span, and three or four from the crown of the arch to the level upon which it rested. At the first glance the appearance of a vault was complete, and I thought I was about to penetrate into a cellar where some interesting find might await me. But on farther examination this pleasant delusion was dispelled. The pretended cellar came to an abrupt end, and declared itself to be no more than a section of vaulting that had quitted its proper place. . . . The evidence thus obtained was

rendered still more conclusive by the discovery on the under side of several fragments of paintings which had evidently been intended for the decoration of a ceiling."[1]

It is clear that these curvilinear and frescoed blocks were fragments of a tunnel vault that had fallen in; and their existence explains the great thickness given by the Assyrian constructor not only to his outer walls, but to those that divided room from room. The thinnest of the latter are hardly less than ten feet, while here and there they are as much as fifteen or sixteen. As for the outer walls they sometimes reach a thickness of from five and twenty to thirty feet.[2] The climate is insufficient to account for the existence of such walls as these. In the case of the outer walls such a reason might be thought, by stretching a point, to justify their extravagant measurements, but with the simple partitions of the interior, it is quite another thing. This apparent anomaly disappears, however, if we admit the existence of vaults and the necessity for meeting the enormous thrust they set up. With such a material as clay, the requisite solidity, could only be given by increasing the mass until its thickness was sometimes greater than the diameter of the chambers it inclosed.

M. Place lays great stress upon the disproportion between the length and width of many of the apartments. There are few of which the greater diameter is not at least double the lesser, and in many cases it is four, five, and even seven times as great. He comes to the conclusion that these curious proportions were forced on the Assyrians by the nature of the materials at their disposal. Such an arrangement must have been destructive to architectural effect as well as inconvenient, but a clay vault could not have any great span, and its abutments must perforce have been kept within a reasonable distance of each other.

Taken by itself, this argument has, perhaps, hardly as much force as M. Place is inclined to give it. Doubtless the predilection for an exaggerated parallelogram agrees very well with the theory that the vault was in constant use by Mesopotamian architects, but it might be quoted with equal reason by the supporters of the opposite hypothesis, that of the timber roof.

Our best reason for accepting all these pieces of evidence as corroborative of the view taken by MM. Flandin, Loftus, Place, and Thomas is, in the first place, the incontestable fact that the

[1] Place, *Ninive*, vol. i. pp. 254-255. [2] *Ibid.* p. 246.

entrances to the town of Khorsabad were passages roofed with barrel vaults; secondly, the presence amid the debris of the fragmentary arches above described; thirdly, the depth of the mass of broken earth within the walls of each chamber; finally, the singular thickness of the walls, which is only to be satisfactorily explained by the supposition that the architect had to provide solid abutments for arches that had no little weight to carry.

It is difficult to say how the Assyrians set about building these arches of crude brick, but long practice enabled their architects to use that unsatisfactory material with a skill of which we had no suspicion before the exhumation of Nineveh. Thanks to its natural qualities and to the experienced knowledge with which it was prepared, their clay was tough and plastic to a degree that astonished the modern explorers on more than one occasion. The arched galleries cut during the excavations—sometimes segmental, sometimes pointed, and often of a considerable height and width—could never have stood in any other kind of earth without strong and numerous supports. And yet M. Place tells us that these very galleries, exactly in the condition in which the mattock left them, "provided lodging for the labourers engaged and their families, and ever since they have served as a refuge for the inhabitants of the neighbouring villages. Workmen and peasants have taken shelter under vaults similar to those of the ancient Assyrians. Sometimes we cut through the accidental accumulations of centuries, where the clay, far from having been carefully put in place, had rather lost many of its original qualities. Even there, however, the roof of our galleries remained suspended without any signs of instability, as if to bear witness that the Assyrian architect knew what he was about when he trusted so much to the virtues of a fictile material." [1]

We may refer those who are specially interested in constructive methods to M. Place's account of the curious fashion in which the workmen of Mossoul will build a pointed vault without the help of any of those wooden centerings in use in Europe. In our day, certainly, the masons of Mossoul use stone and mortar, but their example none the less proves that similar results may once have been obtained in different materials.[2] A vault

[1] PLACE, *Ninive*, vol. i. p. 264.

[2] *Ibid.* p. 265. RICH made similar observations at Bagdad. He noticed that the masons could mount on the vault a few minutes after each course was completed (*Narrative of a Journey to the Site of Babylon*).

launched into mid-air without any centering, and bearing the workmen who were building it on its unfinished flanks, was a phenomenon calculated to astonish an architect. Taking everything into consideration the clay vaults of Khorsabad are no more surprising than these domes of modern Mossoul.[1]

We cannot say for certain that the Assyrian builders made use of domes in addition to the barrel vaults, but all the probabilities are in favour of such an hypothesis.

A dome is a peculiar kind of vault used for the covering of square, circular, or polygonal spaces. As for circular and polygonal rooms, none have been found in Assyria, but a few square ones have been disinterred. On the principal façade of Sargon's palace there are two of a fair size, some forty-eight feet each way. Thomas did not believe that a barrel vault was used in these apartments; the span would have been too great. He sought therefore for some method that would be at once well adapted to the special conditions and in harmony with the general system. This he found in the hemispherical dome.

All doubts on the subject were taken away, however, by the discovery of the bas-relief (Fig. 43) reproduced on page 145, in which we find a group of buildings roofed, some with spherical vaults, some with elliptical domes approaching a cone in outline. This proves that the Mesopotamian architects were acquainted with different kinds of domes, just as they were with varieties of the barrel vault.

It has been guessed that this bas-relief, which is unique in its way, merely represents the brick-kilns used in the construction of the palace of Sennacherib. To this objection there is more than one answer. The Assyrian sculptures we possess represent but a small part of the whole, and each fresh discovery introduces us to forms previously unknown. Moreover, had the sculptor wished to represent the kilns in which the bricks for the palace were burnt, he would have shown the flames coming out at the top. In reliefs of burning towns he never leaves out the flames,

[1] M. A. Choisy, well known by his Essays on *L'Art de batir chez les Romains*, shows that the same method was constantly used by the Byzantine architects. See his *Note sur la Construction des Voûtes sans cintrage pendant la Periode byzantine* (*Annales des Ponts et Chausées*, 1876, second period, vol. xii.). See also Mr. Fergusson's account of the erection of a huge stone dome without centering of any kind, by an illiterate Maltese builder, at Mousta, near Valetta (*Handbook of Architecture*, Second Edition, vol. iv. p. 34).—Ed.

and in this case, where they would have served to mark the activity with which the building operations were pushed on, he would certainly not have omitted them. Again, is not the building on the left of the picture obviously a flat-roofed house? If that be so we must believe, before we accept the kiln theory, that the sculptor made a strange departure from the real proportions of the respective buildings. The doorways, too, in the relief are exactly like those of an ordinary house, while they bear no resemblance to the low and narrow openings which have been used at all times for kilns. Why then should we refuse to admit that there were vaults in Nineveh, when Strabo tells us expressly that "all the houses of Babylon were vaulted."[1]

Thomas invokes the immemorial custom of the East to support the evidence of this curious relief:—the great church of St. Sophia, the Byzantine churches and the Turkish mosques, all of which had no other roof but a cupola. In all of these he sees nothing but late examples of a characteristic method of construction which had been invented and perfected many centuries before at Babylon and Nineveh.

From the monuments with which those two great cities were adorned nothing but the foundations and parts of the walls have come down to our day; but the buildings of a later epoch, of the periods when Seleucia and Ctesiphon enjoyed the heritage of Babylon, have been more fortunate. In the ruins which are acknowledged to be those of the palaces built by the Parthian and Sassanid monarchs, the upper structures are still in existence, and in a more or less well preserved condition. In these the dome arrangement is universal. Sometimes, as at Firouz-Abad (Fig. 52), we find the segment of a sphere; elsewhere, as at Sarbistan (Fig. 53), the cupola is ovoid. Our section of the latter building will give an idea of the internal arrangements of these structures, and will show how the architect contrived to suspend a circular dome over a square apartment.[2]

These monuments of an epoch between remote antiquity and the Græco-Roman period were built of brick, like the

[1] STRABO, xvi. i. 5, Οἱ οἶκοι καμαρωτοὶ πάντες διὰ τὴν ἀξυλίαν.

[2] For a description of these buildings see FLANDIN and COSTE, *Voyage en Perse, Perse ancienne, Text*, pp. 24-27, and 41-43 (6 vols. folio, no date. The voyage in question took place in 1841 and 1842).

palaces of Nineveh.[1] The exigencies of the climate remained the same, the habits and requirements of the various royal

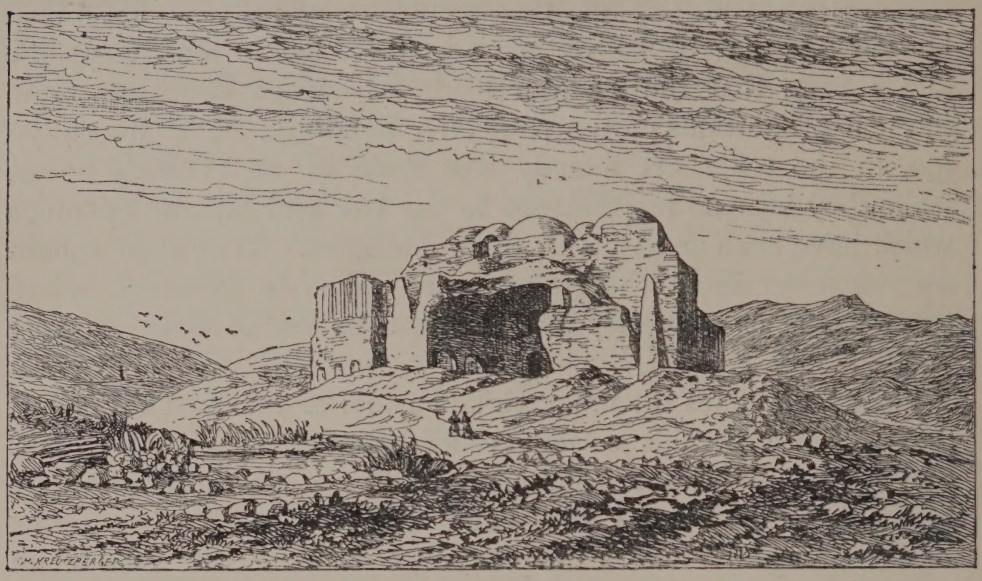


FIG. 52.—The Palace at Firouz-Abad; from Flandin and Coste.

families that succeeded each other in the country were not

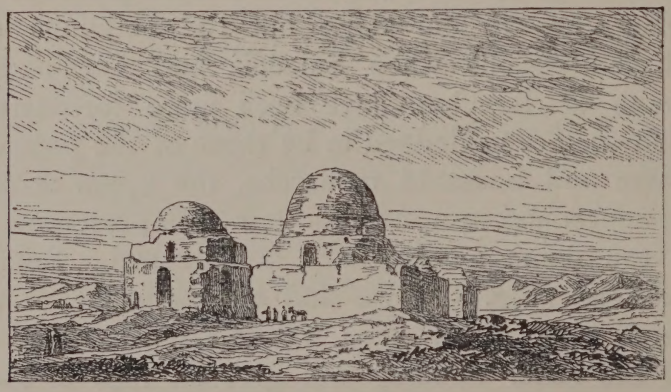


FIG. 53.—The palace at Sarbistan; from Flandin and Coste.

sensibly modified, while the Sargonids, the Arsacids and the Sassanids all ruled over one and the same population.

[1] Brick played, at least, by far the most important part in their construction. The domes and arcades were of well-burnt brick; the straight walls were often built of broken stone, when it was to be had in the neighbourhood. At Ctesiphon, on the other hand, the great building known as the *Takht-i-Khosro* is entirely of brick.

The corporations of architects and workmen must have preserved the traditions of their craft from century to century, traditions which had their first rise in the natural capabilities of their materials and in the data of the problem they had to solve. The historian cannot, then, be accused of going beyond the limit of fair induction in arguing from these modern buildings to their remote predecessors. After the conquest of Alexander, the ornamental details, and, still more, the style of the sculptures, must have been affected to a certain extent, first by Greek art and afterwards by that of Rome; but the plans, the internal structure, and the general arrangement of the buildings must have remained the same.

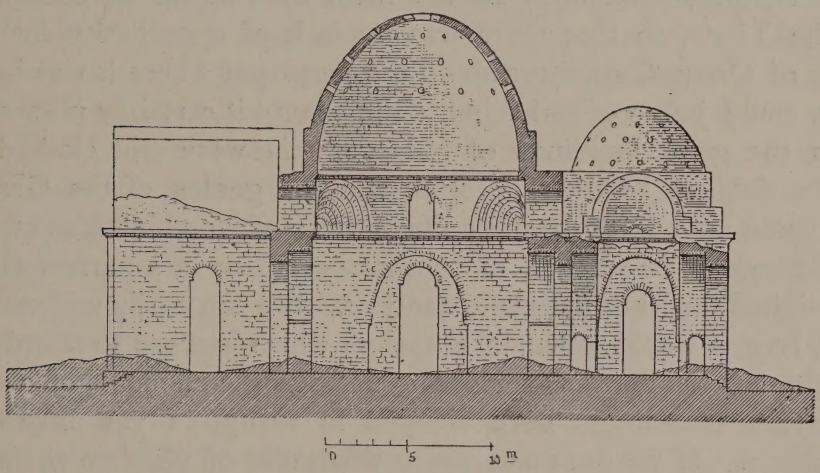


FIG. 54.—Section through the palace at Sarbistan; from Flandin and Coste.

There is nothing hazardous or misleading in these arguments from analogy; from the palace of Chosroes to that of Sargon is a legitimate step. Some day, perhaps, we may attempt to pursue the same path in the opposite direction; we may endeavour to show that the survival of these examples and traditions may very well have helped to direct architecture into a new path in the last years of the Roman Empire. We shall then have to speak of a school in Asia Minor whose works have not yet been studied with the attention they deserve. The buildings in question are distinguished chiefly by the important part played in their construction by the vault and the dome resting upon pendentives; certain constructive processes, too, are to be found in them which had never, so far as we can tell, been known or practised in the East.

We can hardly believe that the chiefs of the school invented from the foundation a system of construction whose principles were so different from those of the Greeks, or even of the later Romans. They may, indeed, have perfected the system by grafting the column upon it, but it is at least probable that they took it in the first place from those who had practised it from time immemorial, from men who taught them the traditional methods of shortening and facilitating the labour of execution. The boundaries of Asia Minor "march" with those of Mesopotamia, and in the latter every important town had buildings of brick covered with domes. The Romans frequented the Euphrates valley, to which they were taken both by war and commerce; their victories sometimes carried them even as far as Ctesiphon on the Tigris, so that there was no lack of opportunity for the study of Oriental architecture on the very spot where it was born. They could judge of and admire the beauty it certainly possessed when the great buildings of Mesopotamia were still clothed in all the richness of their decoration. The genius of the Greeks had come nigh to exhausting the forms and combinations of the classic style; it was tired of continuous labour in a narrow circle and sighed for fresh worlds to conquer. We can easily understand then, how it would welcome a system which seemed to afford the novelty it sought, which seemed to promise the elements of a new departure that might be developed in many, as yet unknown, directions. If we put ourselves at this point of view we shall see that Isidore and Anthemius, the architects of St. Sophia, were the disciples and perpetuators of the forgotten masters who raised so many millions of bricks into the air at the bidding of Sargon and Nebuchadnezzar.[1]

Whatever may be thought of this hypothesis, there seems to be little doubt that the Assyrians knew how to pass from the barrel vault to the hemispherical, and even to the elliptical, cupola. As soon as they had discovered the principle of the vault and found out easy and expeditious methods of setting it up, all the rest followed as a matter of course. Their materials lent themselves as kindly to the construction of a dome as to that of a segmental vault, and promised equal stability in either case. As to their method of

[1] See M. AUGUSTE CHOISY'S *Note sur la Construction des Voûtes*, &c. p. 14. This exact and penetrating critic shares our belief in these relations between the Chaldæan east and Roman Asia.

passing from the square substructure to the dome we know nothing for certain, but we may guess that the system employed by the Sassanids (see Fig. 54) was a survival from it. It is unlikely that timber centerings were used to sustain the vaults during construction. Timber was rare and bad in Chaldæa and men would have to learn to do without it. M. Choisy has shown —as we have already mentioned—that the Byzantine architects built cupolas of wide span without scaffolding of any kind, each circular course being maintained in place until it was complete by the mere adherence of the mortar.[1]

M. Place, too, gives an account of how he saw a few Kurd women build an oven in the shape of a Saracenic dome, with soft clay and without any internal support. Their structure, at the raising of which his lively curiosity led him to assist, was composed of a number of rings, decreasing in diameter as they neared the summit.[2] The domes of crude brick which surmounted many of the Kurd houses were put together in the same fashion, and they were often of considerable size. When asked by M. Place as to how they had learnt to manage brick so skilfully, the oven-builders replied that it was "the custom of the country," and there is no apparent reason why that custom should not date back to a remote antiquity. The Assyrians had recourse to similar means when they built the domes of their great palaces. They too, perhaps, left a day for drying to each circular course, and re-wetted its upper surface when the moment arrived for placing the next.[3]

From the existence of domes—which he considers to be almost beyond question—M. Place deduces that of semi-domes, one of which he assigns to the principal chamber of the harem in the palace at Khorsabad (Fig. 55). Feeling, perhaps, that this requires some justification, he finds it in a modern custom, which he thus describes:—"In the towns of this part of the East, the inner court of the harem is, as a rule, terminated at one of its extremities by a vault entirely open at one side, in the form of a huge niche. It is, in fact, the half of a dome sliced in two from

[1] *Note sur la Construction des Voûtes sans Cintrage*, p. 12.

[2] PLACE, *Ninive*, vol. i. pp. 266-267.

[3] As M. CHOISY remarks (*L'Art de bâtir chez les Romains*, p. 80), each horizontal course, being in the form of a ring, would have no tendency to collapse inwards, and a dome circular on plan would demand some means for keeping its shape true rather than a resisting skeleton.

top to bottom ; the floor, which is elevated a few steps above the pavement of the court, is strewn with carpets and cushions so

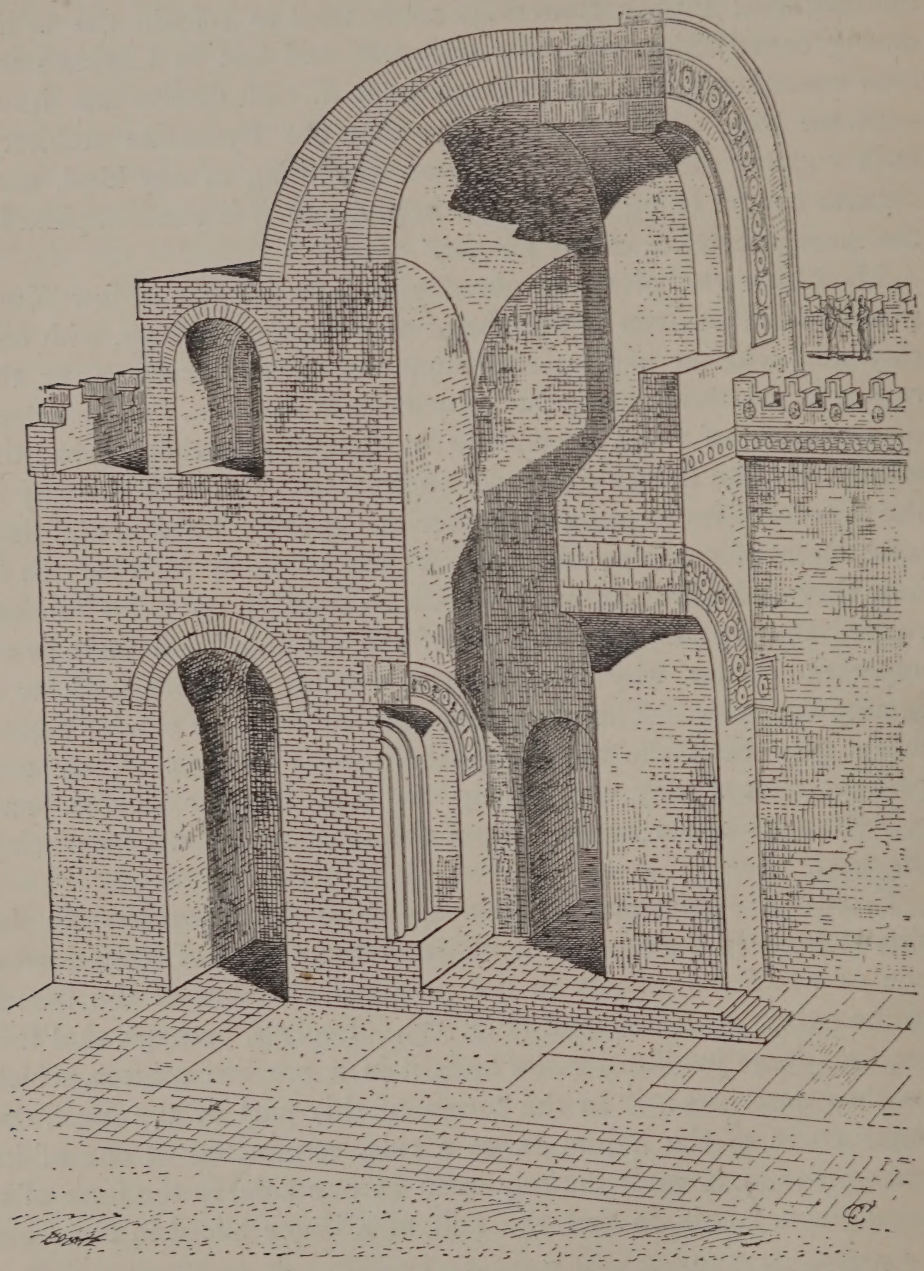


Fig. 55.—Restoration of a hall in the harem at Khorsabad, compiled from Place.

as to form an open and airy saloon, in which the women are to be found by their visitors at certain hours. This divan is protected

from rain by the semi-dome, and from the sun by curtains or mats hung across the arched opening. This arrangement may very well be dictated by ancient tradition. It is well suited to the climate, a consideration which never fails to exercise a decisive influence over architecture." [1]

And yet there would, perhaps, have been room for hesitation had no support to this induction been afforded by the figured monuments ; for the inhabitants of the province of Mossoul have deserted the traditions of their ancestors in more than one particular. They have given up the use of crude brick, for instance, so far, at least as the walls of their houses are concerned. They have supplied its place with stone and plaster, hence their dwellings are less fresh and cool than those of their fathers. In such a question the present throws a light upon the past, but the two have distinctive features of their own, even when the physical

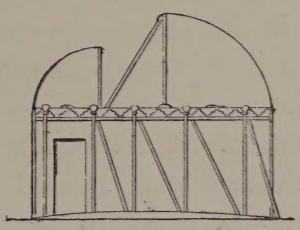


FIG. 56.—Royal Tent, Kouyundjik. British Museum.

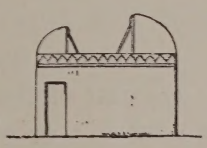


FIG. 57.—Tent, Kouyundjik. British Museum.

characteristics of the country have remained the same. The best evidence in favour of the employment of such an arrangement in Assyria is that of the bas-relief. We there not infrequently encounter an object like those figured on this page. Sometimes it is in the midst of what appears to be an entrenched camp, sometimes in a fortified city. Its general aspect, certain minor details, and sometimes an accompanying inscription, permit us to recognize in it the marquee or pavilion of the king.[2] Now the roofs of these structures evidently consist of two semi-domes,

[1] *Ninive*, vol. i. p. 131.

[2] In both the examples here reproduced the sculptor has indicated the cords by which the canvas walls were kept in place. We find almost the same profile in a bas-relief at Khorsabad (BOTTA, *Monument de Ninive*, pl. 146), but there it is cut with less decision and there are no cords. Between the two semi-domes the figure of a man rises above the wall to his middle, suggesting the existence of a barbette within. Here the artist may have been figuring a house rather than a tent.

unequal in size and separated by an uncovered space. If such an arrangement was found convenient for a portable and temporary dwelling like a tent, why should it not have been applied to the permanent homes both of the king and his people?

Arches still standing in the city gates, fragments of vaults found within the chambers of Sargon's palace at Khorsabad, the evidence of the bas-reliefs and the existing methods of building in Mesopotamia—all concur in persuading us that the vault played an important part in the constructions of Assyria, and consequently in those of Chaldæa; but we should not go so far as to say that all the rooms in the palace at Khorsabad and elsewhere were covered with barrel vaults, domes, or semi-domes. Our chosen guides, have, we think, allowed themselves to be a little too absolute in this particular; it is quite possible that by the side of the vaulted chambers there were others with wooden roofs. This conclusion is suggested partly by Sir H. Layard's discovery of considerable quantities of wood ashes in the palaces he excavated, partly by the evidence of ancient texts that wood was often used throughout this region to support the roofs at least of private houses. We may quote, in the first place, some remarks in Strabo's account of Susiana, which the Greek geographer borrowed from one of his original authorities: "In order to prevent the houses from becoming too hot, their roofs are covered with two cubits of earth, the weight of which compels them to make their dwellings long and narrow, because although they had only short beams, they had to have large rooms, so as to avoid being suffocated." This same writer, in speaking of these roofs, describes a singular property of the palm-tree beams. The densest and most solid of them, he says, instead of yielding with age and sinking under the weight they have to support, take a gentle upward curve so as to become better fitted than at first for the support of the heavy roof.[1]

The necessity for the presence of a thick roof between the sun and the inside of the rooms is here very clearly affirmed. It will also be noticed that the general form of apartments in Susiana and Assyria did not escape the observer in question. As he saw very clearly, the great disproportion between their length and their width was to be explained as easily by the requirements of a wooden roof as by those of a clay vault.

[1] Strabo, xv. 3, 10.

In his attempt to describe Babylon, Strabo says[1]: "In the absence of timber, properly speaking, beams and columns of palm-wood were used in the buildings of Babylonia. These pillars were covered with twisted ropes of rushes, over which several coats of paint were laid. The doors were coated with asphalte. Both doors and houses were very high. We may add that the houses were vaulted, in consequence of the absence of wood. . . . . There were, of course, no tile roofs in countries where it never rains,[2] such as Babylonia, Susiana and Sittacenia."

Strabo himself never visited Mesopotamia. This we know from the passage in his introduction, in which he tells us exactly how far his voyages extended, from north to south, and from east to west.[3] When he had to describe Asia from the Taurus to India, he could only do so with the help of passages borrowed from various authors, and in the course of his work it has sometimes happened that he has brought into juxtaposition pieces of information that contradict each other.[4] Something of the kind has happened in the lines we have quoted, in which he first speaks of pillars and timber roofs, and ends by declaring that all the Chaldæan houses were vaulted, although vaults and timber could not exist together. The truth is, in all probability, that one system of covering prevailed here and another there, and that the seeming contradiction in the text is due to hasty editing. We may conclude from it that travellers had reported the existence of both systems, and that each was to be explained by local conditions and the varying supply of materials.

The two systems still exist side by side over all Western Asia. From Syria to Kurdistan and the Persian Gulf the hemispherical cupola upon a square substructure continually occurs. The timber roof is hardly less frequent; when the apartment in which it is used is of any considerable size it is carried upon two or three rows of wooden columns. These columns rest upon cubes of stone, and a tablet of the same material is often interposed

[1] STRABO, xvi. 1, 5.

[2] Κεράμῳ δ'οὗ χρῶνται, says Strabo. These words, as Letronne remarked *à propos* of this passage, combine the ideas of a tiled roof and of one with a ridge. The one notion must be taken with the other; hence we may infer that the Babylonian houses were flat-roofed.

[3] STRABO, ii. 5, 11.

[4] See M. AMÉDÉE TARDIEU'S reflections upon Strabo's method of work, in his *Géographie de Strabon* (Hachette, 3 vols, 12mo.), vol. iii. p. 286, note 2.

between them and the beams they support. A sort of rustic order is thus constituted of which the shaft alone is of wood. We reproduce a sketch by Sir H. Layard in which this arrangement is shown. It is taken from a house inhabited by Yezidis,[1] in the district of Upper Mesopotamia called *Sinjar* (Fig. 58).

We are inclined to think that both systems were occasionally found in a single building. The tunnel vault and the joisted ceiling were equally well suited to the long galleries of Assyrian palaces. In one room, or suite of rooms, nothing but brick may have been used, while in others wood may have had the preference. Still more probably, one architect may have had a predilection for

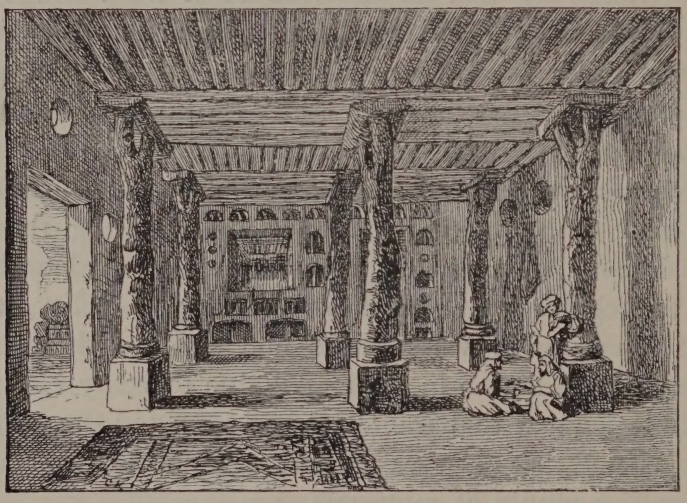


Fig. 58.—Interior of a Yezidi house; from Layard.

timber, while another may have preferred clay vaults. In either case the general arrangement, what we may call the spirit of the plan, would remain the same.

[1] As to this singular people and their religious beliefs, the information contained in the two works of Sir H. Layard (*Nineveh*, vol. i. pp. 270-305, and *Discoveries*, pp. 40-92) will be read with interest. Thanks to special circumstances Sir H. Layard was able to become more intimately acquainted than any other traveller with this much-abused and cruelly persecuted sect. He collected much valuable information upon doctrines which, even after his relation, are not a little obscure and confused. The Yezidis have a peculiar veneration for the evil principle, or Satan; they also seem to worship the sun. Their religion is in fact a conglomeration of various survivals from the different systems that have successively obtained in that part of Asia. They themselves have no clear idea of it as a whole. It would repay study by an archæologist of religions.

When wooden roofs were used were they upheld by wooden uprights or by columns of any other material? Botta was at first inclined to say yes to this question, but he did not attempt to conceal that excavation had discovered little to support such an hypothesis.[1] Such pillars, were they of stone, would leave traces among the ruins in the shape of broken columns; were they of burnt bricks (and there could be no question of the crude material), those bricks would be found on the spot they occupied and would easily be recognized by their shape, which, as we have already shown, would have been specially adapted to the work they had to do.[2] The points of junction with the pavement would also be visible. If we contend that they were of wood, like those of the house figured above, we must admit that, at least in the more carefully built houses, such precautions as even the peasants of the Yezidis do not neglect must have been taken, and the timber columns raised upon stone bases which would protect them from the sometimes damp floors. Neither these bases nor any marks of their existence have been found in any of the ruins; and we are therefore led to the conclusion that to search for hypostyle halls in the Assyrian palaces, would be to follow the imagination rather than the reason.

If we admit that architects made no use of columns to afford intermediate support to the heavy roofs, we may at first be inclined to believe that wooden ceilings were only used in very narrow apartments, for we can hardly give a length of more than from twenty-four to twenty-seven feet to beams that were called upon to support a thick covering of beaten earth as well as their own weight.[3] Perhaps, however, the skill of their carpenters was equal to increasing the span and rigidity of the beams used by a few simple contrivances. One of these is shown in our Fig. 60, a diagram composed by M. Chipiez to give an idea of the different methods of construction used by, or, at least, at the command of, the Assyrian builder.

All the rooms were surmounted by flat roofs, and our horizontal sections show how these roofs were accommodated to the

[1] BOTTA, *Monument de Ninive*, vol. v. p. 70.

[2] See above, page 118, note 1.

[3] Some rooms are as much as thirty feet wide. They would require joists at least thirty-three feet long, a length that can hardly be admitted in view of the very mediocre quality of the wood in common use.

domes or the timber ceilings by which they were supported. On the left of the engraving semicircular vaults are shown, on the right a timbered roof. The arrangement of the latter is taken from an Etruscan tomb at Corneto, where, however, it is carried out in stone.[1] A frame like this could be put together on the spot and offered the means of covering a wider space with the same materials than could be roofed in by a horizontal arrangement. Further back rises one of those domes over square substructures whose existence seems to us so probable. Behind this again opens one of the courts by which so much of the area of the palace was occupied. The composition is completed by a wall with parapet and flanking towers.

Fig. 59.—Fortress ; from Layard's *Monuments*, 1st Series.

After considering the method employed for roofing the palace apartments, we come naturally to investigate their system of illumination. In view of the extravagant thickness of their walls it is difficult to believe that they made use of such openings as we should call windows. The small loop-holes that appear in some of the bas-reliefs near the summits of towers and fortified walls were mere embrasures, for the purpose of admitting a little air and light to the narrow chambers within which the defenders could find shelter from the missiles of an enemy and could store their own arms and engines of war (see Fig. 59). The walls of Khorsabad even now are everywhere at least ten feet high, and in

[1] *Gailhabaud, Monuments anciens et modernes*, vol. i. ; plate entitled *Tombeaux superposés à Corneto.*

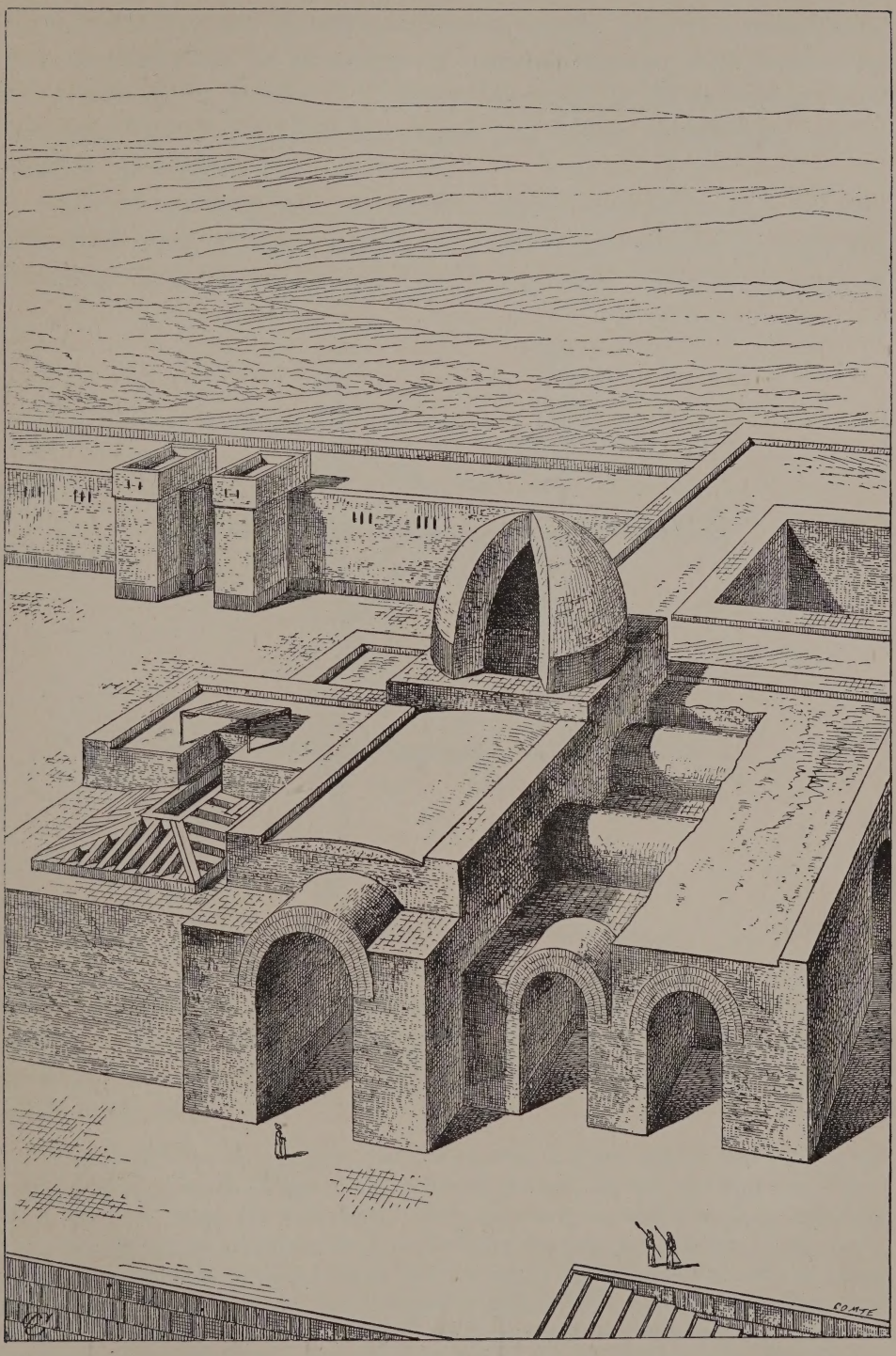


FIG. 60.—Crude brick construction ; compiled by Charles Chipiez.

some parts they are as much as fifteen, twenty, and five-and-twenty feet, an elevation far in excess of a man's stature, and they show no trace of a window. Hence we may at least affirm that windows were not pierced under the same conditions as in modern architecture.[1]

And yet the long salcons of the palace with their rich decoration had need of light, which they could only obtain through the doorways and the openings left in the roof. When this was of

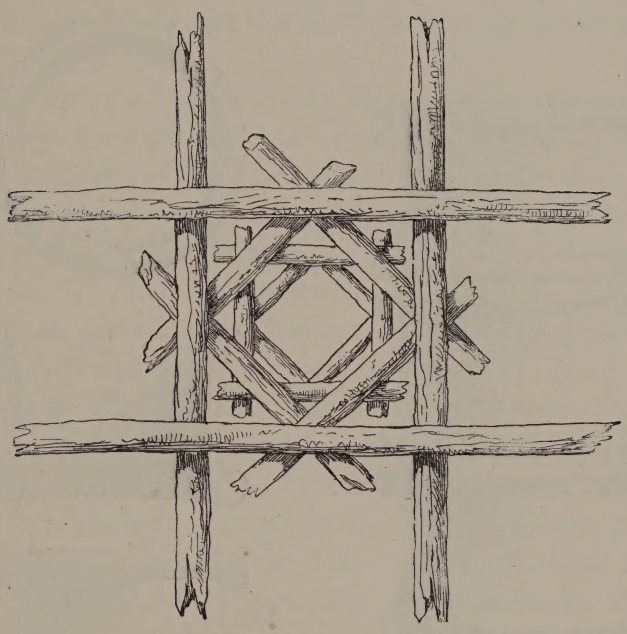
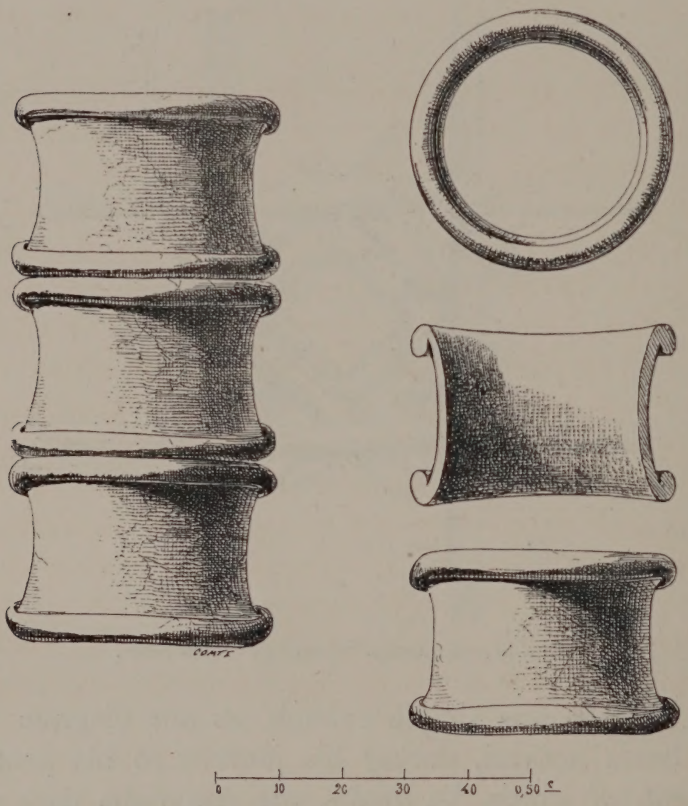


FIG. 61.—Armenian "Lantern;" from Botta.

wood the matter was simple enough, as our diagram (Fig. 60) shows. Botta noticed, during his journey to his post, another arrangement, of which, he thinks, the Assyrians may very well have made use.

[1] PLACE, *Ninive*, vol. i. p. 309. In this passage M. Place affirms that Mr. Layard discovered in a room of one of the Ninevite palaces, several openings cut at less than four feet above the floor level. It is, moreover, certain that these openings were included in the original plan of the building, because the reliefs are interrupted so as to leave room for the window without injury to the scenes sculptured upon them; but, adds M. Place, this example is unique, one of those exceptions that help to confirm a rule. We have in vain searched through the two works of Sir Henry Layard for the statement alluded to by M. Place. The English explorer only once mentions windows, and then he says: "Even in the rooms bounded by the outer walls there is not the slightest trace of windows" (*Nineveh*, vol. ii. p. 260).

"The houses of the Armenian peasantry," he says, "are sunk into the ground, so that their walls stand up but little above the level of the soil. They are lighted by an opening that serves at once for window and chimney, and is placed, as a rule, in the centre of the roof. The timber frame of this opening is often ingeniously arranged (Fig. 61). Four thick beams, but very roughly squared, intersect each other in the middle of the house. Across their angles slighter joists are placed, and this operation



Figs. 62—65.—Terra-cotta cylinders in elevation, section and plan ; from Place.

is repeated till a small dome, open at the top, for the entrance of light and the escape of smoke, has been erected."[1]

In the case of vaults how are we to suppose that the rooms were lighted ? We can hardly imagine that rectangular openings were left in the crown of the arch, such a contrivance would have admitted very little light, while it would have seriously compromised the safety of the structure. According to M. Place the

[1] Botta, *Monument de Ninive*, vol. v. p. 73.

desired result was obtained in more skilful fashion. In several rooms he found terra-cotta cylinders similar to those figured below. These objects, of which he gives a careful description, were about thirteen and a half inches in diameter and ten inches in height. We may refer our readers to the pages of M. Place for a detailed account of the observations by which he was led to conclude that these cylinders were not stored, as if in a warehouse, in the rooms where they were afterwards found, but that they formed an integral part of the roof and shared its ruin. We may say that the evidence he brings forward seems to fairly justify his hypothesis.

Penetrating the roof at various points these cylinders would afford a passage for the outer air to the heated chamber within, while a certain quantity of light would be admitted at the same time. The danger arising from the rains could be avoided to a great extent by giving them a slightly oblique direction. To this very day the Turkish bath-houses over the whole of the Levant from Belgrade to Teheran, are almost universally lighted by these small circular openings, which are pierced in great numbers through the low domes, and closed with immovable glasses. Besides which we can point to similar arrangements in houses placed both by their date and character, far nearer to those of Assyria. The Sassanide monuments bear witness that many centuries after the destruction of Nineveh the custom of placing cylinders of terra-cotta in vaults was still practised. In spite of its small scale these circles may be distinguished in the woodcut of the Sarbistan palace which we have borrowed from Coste and Flandin (Fig. 54).[1]

These same writers have ascertained that the architects of Chosroes and Noushirwan employed still another method of lighting the rooms over which they built their domes. They gave the latter what is called an "eye," about three feet in diameter, through which the daylight could fall vertically into the room beneath. This is the principle upon which the Pantheon of Agrippa is lighted; the only difference being one of proportion.

[1] FLANDIN et COSTE, *Voyage en Perse; Perse ancienne*, plates 28 and 29; and, in the text, page 25. These openings occur in the great Sassanide palace at Ctesiphon, the *Takht-i-khosrou* (*ibid.* pl. 216, and text, p. 175). Here the terra-cotta pipes are about eight inches in diameter. According to these writers similar contrivances are still in use in Persia.

In Persia, the diameter of the eye was always very small compared to that of the dome. If we are justified in our belief that the constructors of the Parthian and Sassanide palaces were no more than the perpetuators of systems invented by the architects of Nineveh and Babylon, the Assyrian domes also may very well have been opened at the summit in this fashion. In the bas-relief reproduced in our Fig. 42, the two small cupolas are surmounted with caps around a circular opening which must have admitted the light. Moreover, the elaborate system of drainage with which the substructure of an Assyrian palace was honeycombed would allow any rain-water to run off as fast as such a hole would admit it.[1]

Whatever may be thought of these conjectures, it is certain that the architects of Nineveh—while they did not neglect accessory sources of illumination—counted chiefly upon the doors to give their buildings a sufficient supply of light and air. As M. Place says, when we examine the plans of Sargon's palace at Khorsabad we are as much astonished at the size of the doorways as at the thickness of the walls.[2]

"There is not a single doorway, even of the smallest chambers, even of the simple ante-rooms for the use of servants and guards, that is not at least six feet or more wide; most of them are ten feet, and those decorated with sculptures even wider still." In their present ruinous state, it is more difficult to say for certain what their height may have been. Judging, however, from the ruins and from the usual proportions of height and width in the voids of Assyrian buildings, the doors at Khorsabad must have risen to a height of between fifteen and twenty-two feet, "Such measurements are those of exceptionally vast openings, especially when we remember that most of them gave access, not to state apartments, but to rooms used for the most ordinary purposes, store-rooms, ante-rooms, kitchens, serving-rooms of all kinds, and bedrooms. When we find architects who were so reluctant as those of Assyria to cut openings of any kind in their

[1] In the cupola of the palace at Sarbistan (Fig. 54), a window may be perceived in the upper part of the vertical wall, between the pendentives of the dome. Such openings may well have been pierced under Assyrian domes. From many of the illustrations we have given, it will be seen that the Ninevite architects had no objection to windows, provided they could be placed in the upper part of the wall. It is of windows like ours, pierced at a foot or two above the ground, that no examples have been found.

[2] Place, *Ninive*, vol. i. pp. 312-314.

outer walls, using doorways of these extravagant dimensions, we may surely conclude that they were meant to light and ventilate the rooms as well as to facilitate the circulation of their inhabitants."[1]

Even in halls, which were lighted at once by a number of circular eyes like those described and by a wide doorway, there would be no excess of illumination, and the rooms of Assyria must, on the whole, have been darker than ours. When we remember the difference in the climates this fact ceases to surprise us. With our often-clouded skies we seldom have too much light, and we give it as wide and as frequent passages as are consistent with the stability of our buildings. The farther north we go the more strongly marked does this tendency become. In Holland, the proportion of voids to solids is much greater than it is on the façade of a Parisian house, and the same tendency may be traced from one end of Europe to the other. But even in Central Europe, as soon as the temperature rises above a certain point, curtains are drawn and jalousies closed, that is, the window is suppressed as far as possible. And is not that enough to suggest a probable reason for the want of windows characteristic of an Oriental dwelling? An explanation has been sometimes sought in the life of the harem and in the desire of eastern sovereigns to withdraw themselves from the eyes of their subjects. The idleness, almost amounting to lethargy, of the present masters of the East has also been much insisted on. What, it is asked, do these men want with light? They neither read nor work, they care nothing for those games of skill or chance which form so large a part of western activity; absolute repose, the repose of sleep or stupefaction, is their ideal of existence.[2]

These observations have hardly the force that has been ascribed to them. The harem is not the whole palace, and even in the modern East the *selamlik*, or public part of the house, is very differently arranged from the rooms set apart for the women. The hunting and conquering kings of Assyria lived much in public. They appeared too often at the head of their armies or among the hounds for us to represent them—as the Greek tradition represented Sardanapalus—shut up within blind walls in distant and almost inaccessible chambers. We must guard ourselves against the mistake of seeking analogies too close

[1] PLACE, *Ninive*, vol. i. p. 313.

[2] *Ibid.*, p. 310.

between the East of to-day and that of the centuries before the Greek civilization.

The people who now inhabit those countries are in a state of languor and decay. Life has retired from them; their days are numbered, and the few they have yet to live are passed in a death-like trance. But it was not always thus. The East of antiquity, the East in which man's intellect awoke while it slumbered elsewhere, the East in which that civilization was born and developed whose rich and varied creations we are engaged in studying, was another place. Its inhabitants were strangely industrious and inventive, their intellects were busied with every form of thought, and their activity was expended upon every art of peace and war. We must not delude ourselves into thinking that the Chaldæans, who invented the first methods of science, that the Assyrians, who carried their conquests as far as the shores of the Mediterranean, that those Phœnicians who have been happily called "the English of antiquity," had any great resemblance to the Turks who now reign at Bagdad, Mossoul, and Beyrout.

But the climate has not changed, and from it we must demand the key to the characteristic arrangements of Mesopotamian palaces. Even now most of the buildings of Mossoul are only lighted from the door, which is hardly ever shut. Some rooms have no direct means either of lighting or ventilation, and these are the favourite retreats in summer. "I was enabled," says M. Place, "to convince myself personally of this. In the consul's house there were, on one side of the court, three rooms one within the other, of which the first alone was lighted from without, and even this had a covered gallery in front of it, by which the glare was tempered. In the dog-days, when the mid-day sun rendered all work a punishment, the innermost of these three rooms was the only habitable part of the house. The serdabs, or subterranean chambers, are used under the same conditions. They are inconvenient in some ways, but the narrowness of the openings, through which light, and with it heat, can reach their depths, gives them advantages not to be despised." [1]

The crude brick walls of ancient Assyria were far thicker than the rubble and plaster ones of modern Mossoul, so that more light could be admitted to the rooms without compromising their

[1] Place, *Ninive*, vol. i. p. 311.

freshness. It seems to be proved that in at least the majority of rooms at Khorsabad the architect provided other means of lighting and ventilation besides the doorways, wide and high though the latter were. He pierced the roof with numerous oblique and vertical openings, he left square wells in the timber ceilings, and circular eyes in the domes and vaults. If these were to fulfil their purpose of admitting light and air into the principal rooms, the latter must have had no upper stories to carry. At Mossoul, walls are much thinner than at Nineveh, and interiors are simpler in arrangement and decoration. The twenty or five-and-twenty feet of clay of the Assyrian walls would make it impossible to give sufficient light through the doors alone to the sculptures and paintings with which the rooms were adorned. We cannot doubt that a top light was also required. The rooms of the palaces must, therefore, have succeeded one another in one horizontal plan. Slight differences of level between them were connected by short flights, usually of five carefully-adjusted steps.[1] In spite of all its magnificence the royal dwelling was no more than a huge ground floor.

With such methods of construction as those we have described, it would have been very difficult to multiply stories. Neither vaults nor timber ceilings could have carried the enormous masses of earth of which even their partition-walls for the most part consisted, so that the architect would have had no choice but to make his upper chambers identical in size with those of his ground floors. This difficulty he was not, however, called upon to face, because the necessity for providing his halls and corridors with a top light, put an upper floor out of the question. No trace of such a staircase as would have been required to give access to an upper story has been discovered in any of the Assyrian ruins,[2] and yet some means of ascent to the terraced roofs must have been provided, if not for the inhabitants of the chambers below—who are likely, however, to have passed the nights upon them in the hot season—at least for the workmen whose duty it was to keep them in repair.

Some parts of the palace, on the other hand, may have been raised much above the level of the rest. Sir Henry Layard found the remains of such chambers in the palace of Assurnazirpal at

[1] PLACE, *Ninive*, vol. i. p. 307.

[2] See BOTTA, *Monument de Ninive*, vol. v. p. 53; PLACE, *Ninive*, vol. i. pp. 306, 307.

Nimroud.[1] In the bas-relief from Kouyundjik, reproduced in our Fig. 39, an open gallery may be noticed at a great height above the soil. But neither this gallery nor the chambers discovered at Nimroud form what we should call a "first-floor." Layard did not conduct his excavations like an architect, and he fails to give us such information as we have in the case of Khorsabad, but he tells us that the chambers in question formed the upper part of a sort of tower projecting from one angle of the façade. In the building represented on the Kouyundjik relief, the gallery is also upheld by the main wall, and stands upon its summit. From these observations we may conclude that when the Assyrian architect wished to erect chambers that should have a command over the buildings about them and over the surrounding country, he placed them, not over his ground-floor, but upon solid and independent masses of bricks.

The staircase, then, could not have had the internal importance by which it is distinguished in architectural systems that make use of several stories. On the other hand, it must have played a very conspicuous part externally, in front of the outer doors and the façades through which they were pierced. Fortresses, palaces, temples, all the great buildings of Chaldæa and Assyria, were built upon artificial mounds, upon a wide platform that required an easy communication with the plain below. This could only be obtained by long flights of steps or by gently inclined planes. Steps would do for pedestrians, but horses, chariots, and beasts of burden generally would require the last-named contrivance. All who have attempted restorations have copied the arrangement of these stairs and sloping roads from the ruins of Persepolis, where the steps, being cut in the rock itself, are still to be traced. The brick slopes of Mesopotamia must have commenced to disappear on the very day that their custodians first began to neglect their repair.

Some confirmation, however, is to be found, even in the buildings themselves, of the hypothesis suggested by their situations. At Abou-Shareyn, for instance, in Lower Chaldæa, the staircase figured on the next page (Fig. 66) may be seen at the foot of the building excavated by Mr. Taylor; it gave access to the upper terrace of what seems to have been a temple.[2] Here the steps

[1] Layard, *Nineveh*, vol. ii. p. 15.

[2] Taylor, *Journal of the Royal Asiatic Society*, vol. xv. p. 409.

are no more than about twenty-six inches wide, but this width must often have been greatly surpassed elsewhere. Indeed, in the same building the first story was reached by a staircase about seventy feet long and sixteen wide. The stone steps were twenty-two inches long, thirteen broad, and one foot deep. They were fixed with great care by means of bronze clasps. Unfortunately the explorer gives us neither plan nor elevation of this monumental staircase.

Layard believed that, in passing the Mesopotamian mounds, he could often distinguish upon them traces of the flights of steps by which their summits were reached.[1] On the eastern face of the palace of Sennacherib, he says, the remains of the wide slopes by which the palace communicated with the plain were quite visible

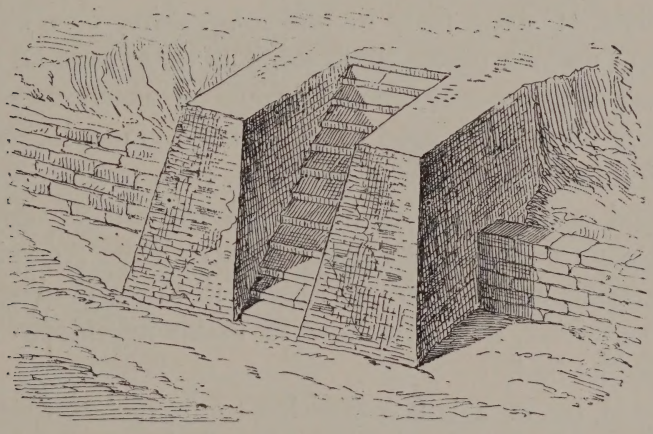


FIG. 66.—Outside staircases in the ruins of Abou-Shareyn.

to him.[2] One of these staircases is figured in a bas-relief from Nimroud; it seems to rise to a line of battlements that form, no doubt, the parapet to a flat terrace behind.[3] Finally, in another relief, the sculptor shows two flights of steps bending round one part of a mound and each coming to an end at a door into the temple on its summit. The curve described by this ramp involved the use of steps, which are given in M. Chipiez's *Restoration* (Plate IV.). An interesting series of reliefs, brought to England from Kouyundjik, proves that in the palace interiors there were inclined galleries for the use of the servants. The lower

[1] LAYARD, *Discoveries*, p. 260.

[2] LAYARD, *Discoveries*, pp. 645-6.

[3] LAYARD, *Monuments*, &c., first series, plate 19. This relief is reproduced in PLACE, *Ninive*, vol. iii. plate 40, fig. 6.

edges of the alabaster slabs are cut to the same slope as that of the corridor upon whose walls they were fixed, and their sculptures represent the daily traffic that passed and repassed within those walls.[1] On the one hand, fourteen grooms are leading fourteen horses down to the Tigris to be watered; on the other, servants are mounting with provisions for the royal table in baskets on their heads.[2]

The steps of basalt and gypsum, that afford communication between rooms of different levels at Khorsabad, are planned and adjusted with great skill and knowledge.[3] The workmen who built those steps took, we may be sure, all the necessary precautions to prevent men and beasts from slipping on the paved floors of the inclined galleries. These were constructed upon the same plan as the ramps of M. Place's observatory, on which the pavement consists of steps forty inches long, thirty-two inches wide, and less than an inch high. Such steps as these give an inclination of about one in thirty-four, and the ramp on which they were used may be more justly compared to an inclined plane, like that of the Seville Giralda or the Mole of Hadrian, than to a staircase. One might ascend or descend it on horseback without any difficulty.[4]

By this example we may see that although the Assyrian builder had no materials at his command equal to those employed by the Greek or Egyptian, he knew how to make ingenious and skilful use of those he had.

We should be in a better position to appreciate these qualities of invention and taste had time not entirely deprived us of that part of the work of the Mesopotamian architects in which they were best served by their materials. Assyria, like Egypt, practised construction "by assemblage" as well as the two methods we have already noticed. She had a light form of architecture in which wood and metal played the principal part. As might have been expected, however, all that she achieved in that direction has perished, and the only evidence upon which we can attempt a restoration is that of the sculptured monuments, and they, unhappily, are much less communicative in this respect than

[1] British Museum; Kouyundjik Gallery, Nos. 34—43. See also Layard's *Monuments*, plates 8 and 9.—Ed.

[2] A second inclined gallery of the same kind was found by Layard in another of the Kouyundjik palaces (*Discoveries*, p. 650).

[3] Place, *Ninive*, vol. i. pp. 306, 307.

[4] Place, *Ninive*, vol. i. p. 140.

those of Egypt. In the paintings of the Theban tombs the kiosks and pavilions of wood and metal are figured in all the variety and vivacity derived from the brilliant colours with which they were adorned. Nothing of the kind is to be found in Mesopotamia. Our only documents are the uncoloured reliefs which, even in the matter of form, are more reticent than we could have wished. But in spite of their simplification these representations allow us to perceive clearly enough the mingled elegance and richness that characterized the structures in question.

Thus in a bas-relief at Nimroud representing the interior of a fortress, a central place is occupied by a small pavilion generally supposed to represent the royal tent (Fig. 67).[1] The artist could

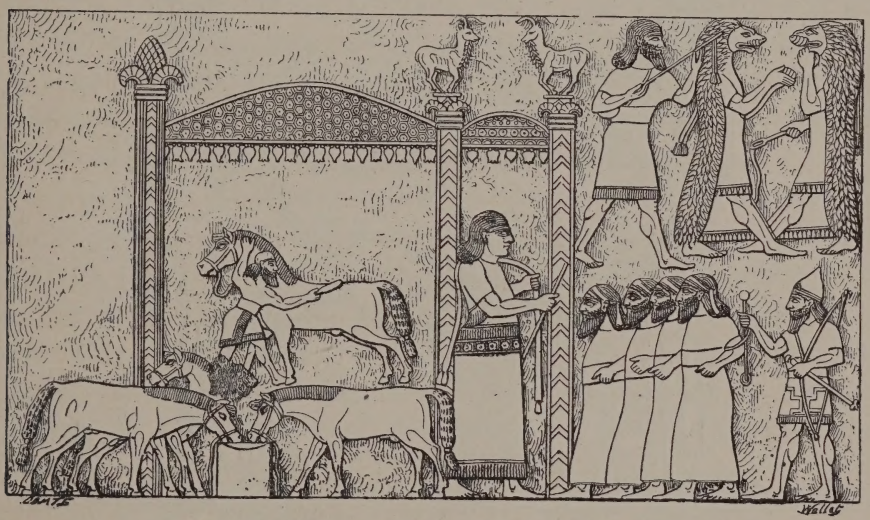


FIG. 67.—Interior of the Royal Tent; from Layard.

not give a complete representation of it, with all its divisions and the people it contained. He shows only the apartment in which the high-bred horses that drew the royal chariot were groomed and fed. Before the door of the pavilion an eunuch receives a company of prisoners, their hands bound behind them, and a soldier at their elbow. Higher up on the relief the sculptor has figured the god with fish's scales whom we have already encountered (see Fig. 9). To him, perhaps, the king attributed the capture of the fortress that has just fallen into his hands.

It is not, however, with an explanation of the scene that we are

[1] As to the great size sometimes reached by the tents of the Arab chiefs, and the means employed to divide them into several apartments, see LAYARD, *Discoveries*, p. 313, and the sketch on page 321.

at present concerned; our business is with the structure of the pavilion itself, with the slender columns and the rich capitals at their summits, with the domed roof, made, no doubt, of several skins sewn together and kept in place by metal weights. The capitals and the two wild goats perched upon the shafts must have been of metal.

As for the tall and slender columns themselves, they were doubtless of wood. The chevrons and vertical fillets with which they are decorated may either have been carved in the wood or inlaid in metal.

Fig. 68.—Tabernacle; from the Balawat Gates.

The pavilion we have just described was a civil edifice, the temporary resting place of the sovereign. The same materials were employed in the same spirit and with a similar arrangement in the erection of religious tabernacles (see Fig. 68). The illustration on this page is taken from those plates of beaten bronze which are known as the *Gates of Balawat* and form one of the most precious treasures in the Assyrian Galleries of the British Museum.[1] They represent the victories and military expeditions

[1] There is a photographic reproduction of these interesting reliefs in the fine publication undertaken by the Society of Biblical Archæology. This work, which is not yet (1883) complete, is entitled *The Bronze Ornaments of the Gates of Balawat*,

of Shalmaneser II. In the pavilion that we have abstracted from this long series of reliefs may be recognized the field-chapel of the king. When that cruel but pious conqueror wished to thank Assur for some great success, he could cause a tabernacle like this to be raised in a few minutes even upon the field of battle itself. It is composed of four light columns supporting a canopy of leather which is kept in form by a fringe of heavy weights. Rather above the middle of these columns two rings give an opportunity for a knotted ornament that could also be very quickly arranged, and the brilliant colours of the knots would add notably to the gay appearance of the tabernacle. Under the canopy the king himself is shown standing in an attitude of worship and pouring a libation on the portable altar. The latter is a tripod, probably of bronze, and upon it appears a dish with something in it which is too roughly drawn to be identified. On the right stands a second and smaller tripod with a vessel containing the liquid necessary for the rite.

The graphic processes of the Assyrian sculptor were so imperfect that at first we have some difficulty in picturing to ourselves the originals of these representations; in spite of the care devoted to many of their details, the real constitution of these little buildings is not easily grasped. In order to make it quite clear M. Chipiez has restored one of them, using no materials in the restoration but those for which authority is to be found in the bas-reliefs (Fig. 70).

M. Chipiez has placed his pavilion upon a salient bastion forming part of a wide esplanade. Two staircases lead up to it, and the wall by which the whole terrace is supported and inclosed is ornamented with those vertical grooves which are such a common motive in Chaldæan architecture. In front of the pavilion, on the balustrade of the staircase, and in the background near a third flight of steps, four isolated columns may be seen, the two former crowned with oval medallions, the two latter with cones. The meaning of these standards—which are copied from the Balawat Gates[1]—is uncertain. In the

Shalmaneser II. 859-825, edited, with an introduction, by Samuel BIRCH, with descriptions and translations by Theophilus G. PINCHES, folio, London. The three first parts are before us. The motive reproduced above belongs to the plate marked E, 5.

[1] They are to be found on the sheet provisionally numbered B, 1, in the publication above referred to.

bas-reliefs in question they are placed before a stele with a rounded top, which is shown at the top of our engraving. This stele bears a figure of the monarch; another one like it is cut upon a cylinder of green feldspar found by Layard close to the principal entrance to Sennacherib's palace (see Fig. 69).[1]

Though practically absent from the great brick palaces, the column here played an important and conspicuous part. It furnished elegant and richly decorated supports for canopies of wool that softly rose and fell with the passing breeze. Fair carpets were spread upon the ground beneath, others were suspended to cross beams painted with lively colours, and swept the earth with the long and feathered fringes sewn upon their borders.

The difference was great between the massive buildings by which the Mesopotamian plains were dominated, and these light,

Fig. 69.—The Seal of Sennacherib. Cylinder of green feldspar in the British Museum.

airy structures which must have risen in great numbers in Chaldæa and Assyria, here on the banks of canals and rivers or in the glades of shady parks, there on the broad esplanades of a temple or in the courts of a royal palace. Between the mountains of clay on the one hand and these graceful tabernacles with their slender supports and gay coverings on the other, the contrast must have been both charming and piquant. Nowhere else do we find the distinction between the house and the tent so strongly marked. The latter must have held, too, a much more important place in the national life than it did either in Egypt or Greece. The monarch spent most of his time either in hunting or fighting, and his court must have followed him to the field. Moreover, when spring covers every meadow with deep herbage and brilliant flowers, an irresistible desire comes over the inhabitants of such

[1] This cylinder, which is now in the British Museum, was perhaps the actual signet of the king.

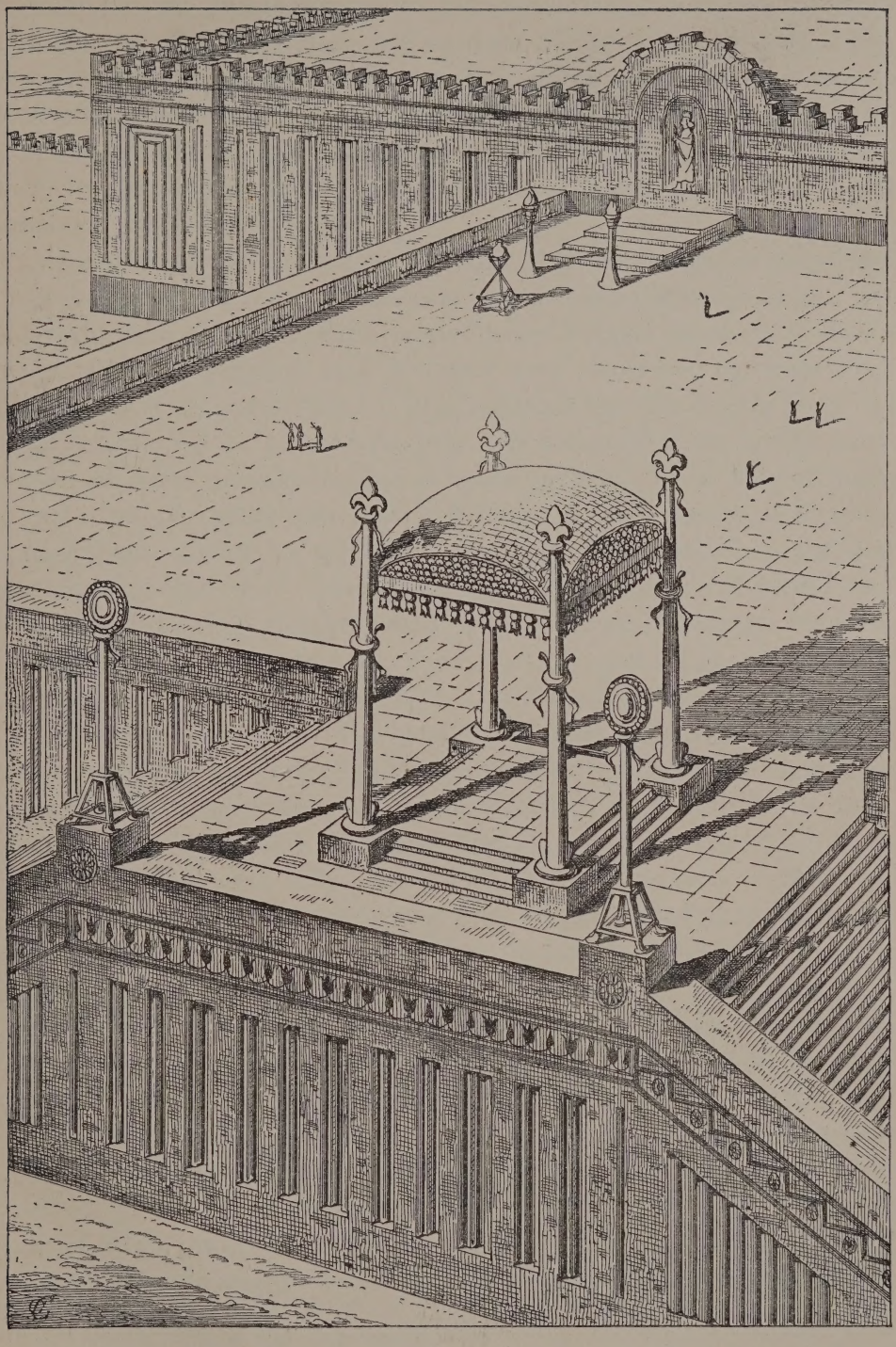


FIG. 70.—Type of open architecture in Assyria ; composed by Charles Chipiez.

countries as Mesopotamia to fly from cities and set up their dwellings amid the scents and verdure of the fields. Again, when the summer heats have dried up the plains and made the streets of a town unbearable, an exodus takes place to the nearest mountains, and life is only to be prized when it can be passed among the breezes from their valleys and the shadows of their forest trees.

Even in our own day the inhabitants of these regions pass from the house to the tent with an ease which seems strange to us. At certain seasons some of the nomad tribes betake themselves within the walls of Bagdad and Mossoul and there set up their long black tents of goats' hair.[1] Judging from the bas-reliefs they did the same even in ancient Assyria; in some of these a few tents may be seen sprinkled over a space inclosed by a line of walls and towers.[2] Abraham and Lot slept in their tents even when they dwelt within the walls of a city.[3] Lot had both his tent and a house at Sodom.[4] Every year the inhabitants of Mossoul and the neighbouring villages turn out in large numbers into the neighbouring country, and, during April and May, re-taste for a time that pastoral life to which a roof is unknown.

The centuries have been unable to affect such habits as these, because they were suggested, enforced, and perpetuated by nature herself, by the climate of Mesopotamia; and they have done much to create and develop that light and elegant form of building which we may almost call the architecture of the tent. In these days and in a country into whose remotest corners the decadence has penetrated, the tent is hardly more than a mere shelter; here and there, in the case of a few chiefs less completely ruined than the rest, it still preserves a certain size and elegance, but as a rule all that is demanded of it is to be sufficiently strong and thick to resist the wind, the rain, and the sun. It was otherwise in the rich and civilized society with which we are now concerned. Its arrangement and decoration then called forth inventive powers and a refined taste of which we catch a few glimpses in the bas-reliefs. It gave an opportunity for the employment of forms and motives which could not be

[1] LAYARD, *Nineveh*, vol. ii. p. 272.

[2] LAYARD, *Monuments of Nineveh*, first series, plate 77; second series, plates 24 and 36.

[3] *Genesis*, xiii. 12.

[4] *Genesis*, xix.

used at all, or used in a very restricted fashion, in more solid structures, such as palaces and temples. Of all these that which most closely results from the necessities of wooden or metal construction is the column, and we therefore find that it is in this tent-architecture that it takes on the characteristics that distinguish it from the Egyptian column and give it an originality of its own.

§ 4.—*The Column.*

As Chaldæa, speaking broadly, made no use of stone in its buildings, the stone column or shaft was unknown to its architects; at least not a single fragment of such a thing has been found among the ruins. Here and there cylindrical piers built up of small units seem to have been employed. These are sometimes of specially moulded bricks,[1] sometimes of sandstone fragments supported by a coat of masonry. Time has separated the stones of the latter, and it is now only represented by fragments whose shape betrays their original destination. Taylor, indeed, found one of these piers still in place during his excavations at Abou-Sharein, but his sketch and description are so confused that it is quite useless to reproduce them.[2]

On the other hand, Chaldæa preceded Assyria in the art of raising airy structures mainly composed of wood and metal, and by them she was led to the use of slender supports and a decoration in which grace and elegance were the most conspicuous features. We have a proof of this in a curious monument recently acquired by the British Museum. It comes from Abou-Abba, about sixteen miles south-west of Bagdad, and is in a marvellous state of preservation. Abou-Abba has been recognized as the site of the ancient Sippara, one of the oldest of Chaldæan towns. Its sanctuaries, in which the sun-god, Samas, was chiefly adored, always maintained a great importance.

The monument in question is a tablet of very close-grained grey stone 11⅕ inches long 6 inches high and, in the centre, about 3 inches thick. Its thickness increases from top to bottom. The

[1] See above, p. 118, note 1.

[2] TAYLOR, *Notes on Abou-Sharein, and Tel-el-Lahm*, (*Journal of the Royal Asiatic Society*, vol. xv. p. 404).—ED.

edge is grooved. High up on the obverse there is a bas-relief, beneath this commences a long inscription which is finished on the reverse.[1] Shorter inscriptions are engraved on the field of the relief itself. The whole work—figures, inscriptions, and outer mouldings—is executed with the utmost care. The laborious solicitude with which the smallest details are carried out is to be explained by the destination of this little plaque, namely, the temple in the centre of Sippara in which a triad consisting of Sin, Samas, and Istar was the object of worship.[2]

The relief itself—which we reproduce from a cast kindly presented to us by Dr. Birch—occupies rather less than half of the obverse (Fig. 71). It represents a king called Nabou-Abla-Idin, who reigned about 900, doing homage to the sun-god.[3] We shall return to this scene and its composition when the time arrives for treating Chaldæan sculpture. At present we only wish to speak of the pavilion under which the deity is enthroned upon a chair supported by two beings half man and half bull.

This kind of tabernacle is bounded, above and at the back of the god, by a wall of which there is nothing to show the exact nature. Its graceful, sinuous line, however, seems to exclude the idea, sufficiently improbable in itself, of a brick vault. It may possibly have been of wood, though it would not be easy to obtain this elegant curve even in that material.

But such forms as this are given with the greatest ease in metal, and we are ready to believe that what the artist here meant to represent was a metal frame, which could at need be hidden under a canopy of leather or wool, like those we have already encountered in the Assyrian bas-reliefs (Figs. 67 and 68). The artist has in fact made use of a graphic process common enough with the Egyptians.[4] He has given us a lateral elevation of the tabernacle with the god in profile within it, because his skill was

[1] This inscription is published in full in the *Cuneiform Inscriptions of Western Asia*, vol. v. part ii.

[2] The names of these three deities are furnished by the inscription which runs beneath the canopy of the pavilion (see Fig. 71).

[3] The disk upon the table is enough by itself to betray the identity of the god, but as if to render assurance doubly sure, the artist has taken the trouble to cut on the bed of the relief under the three small figures, an inscription which has been thus translated by MM. OPPERT and MÉNANT: "Image of the Sun, the Great Lord, who dwells in the temple of Bit-para, in the city of Sippara."

[4] See our *History of Art in Ancient Egypt*, vol. ii. chap. 1, §1.

unequal to the task of showing him full front and seated between the two columns of the façade.

The single column thus left visible has been represented with great skill and care; the sculptor seems to have taken pleasure in dwelling upon its smallest details. Slender as it is, it must have been of wood. The markings upon it suggest the trunk of a palm, but we may be permitted to doubt whether it was allowed to remain in its natural uncovered state. Even in the climate of Chaldæa a dead tree trunk exposed to the air would have no great durability. Sooner or later the sun, the rain, the changes of temperature, would give a good account of it, and besides, a piece of rough wood could hardly be made to harmonize with the luxury that must assuredly have been lavished by the people of Sippara upon the sanctuary of their greatest divinity.

It is probable, therefore, that the wood was overlaid with plates of gilded bronze, fastened on with nails.

This hypothesis is confirmed by one of M. Place's discoveries at Khorsabad.[1] There, in front of the Harem, he found several large fragments of a round cedar-wood beam almost as thick as a man's body. It was cased in a bronze sheath, very much oxydized and resembling the scales of a fish in arrangement (Fig. 72). The metal was attached to the wood by a large number of bronze nails. Comparing these remains with certain bas-reliefs in which different kinds of trees appear (Fig. 27) we can easily see that the Ninevite sculptors meant to represent the peculiar roughnesses of palm bark. Their usual methods are modified a little by the requirements of the material and the size of the beam upon which it was used. Each scale was about $4\frac{1}{2}$ inches high, and according to the calculations of M. Place, the whole mast must have been from five-and-thirty to forty feet high. Working for spectators on a lower level and at some distance, the smith thought well to make his details as regular and strongly marked as he could; to each scale or leaf he gave a raised edge to mark its contour and distinguish it from the rest. The general effect was thus obtained by deliberate exaggeration of the relief and by a conventionality that was justified by the conditions of the problem to be solved.

At a little distance from this broken beam M. Place found

[1] Place, *Ninive*, vol. i. pp. 120-122, and vol. iii. plate 73.

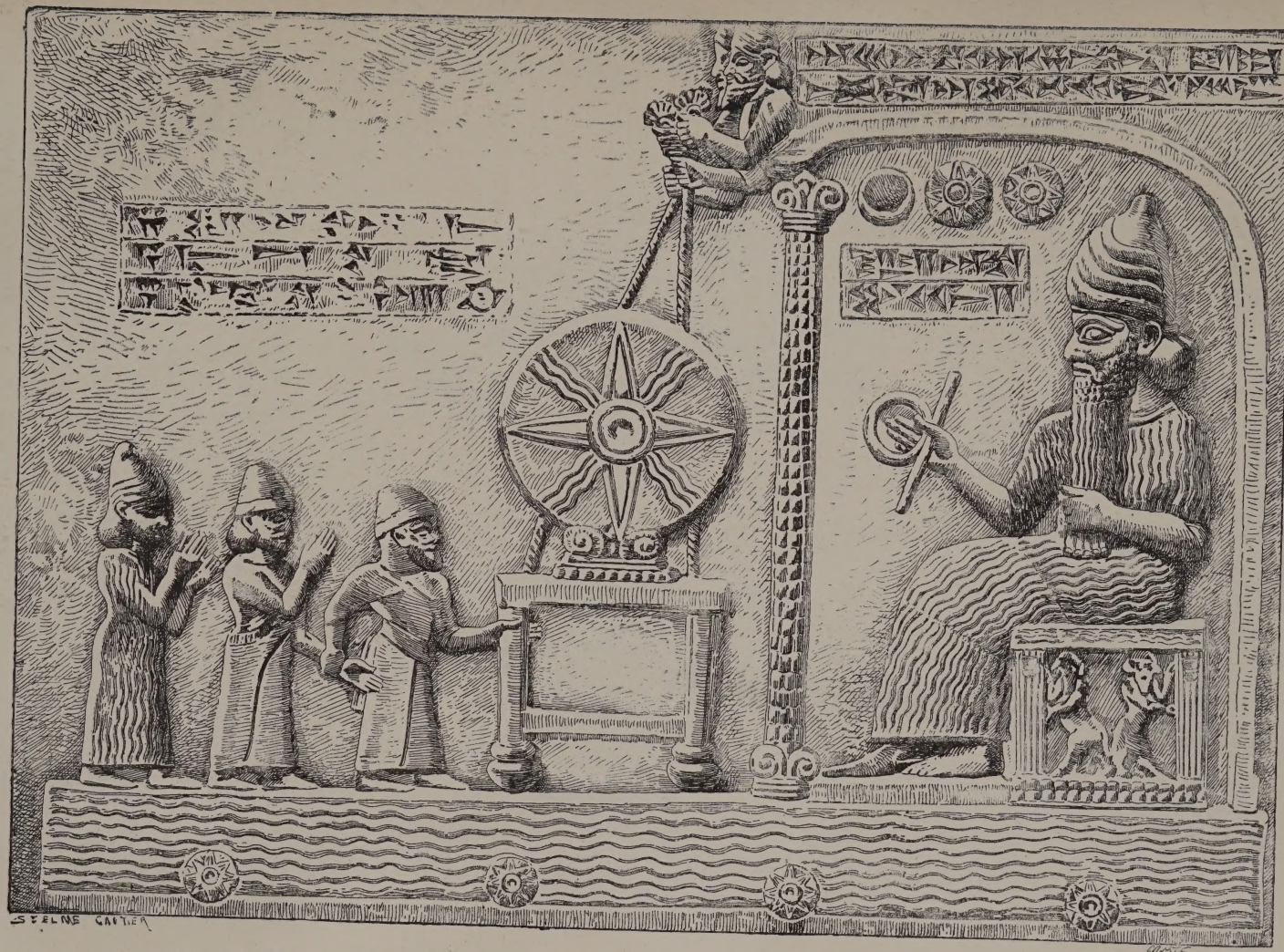


FIG. 71.—Homage to *Samas* or *Shamas*. Tablet from Sippara. Actual size. Drawn by Saint-Elme Gautier.

a leaf of gold which is now in the Louvre; it presents the same ovoid forms as the bronze sheathing, and, moreover, the numerous nail holes show that it was meant to fulfil the same purpose as the bronze plates. The place in which it was found, its dimensions and form, all combine to prove that it was laid upon the bronze as we should lay gold leaf. It bears an inscription in cuneiform characters.

We are inclined to take these plates for models in restoring the columns of the Sippara tabernacle. There is nothing in the richness of this double covering of bronze and gold to cause surprise, as the inscription which covers part of the face and the whole

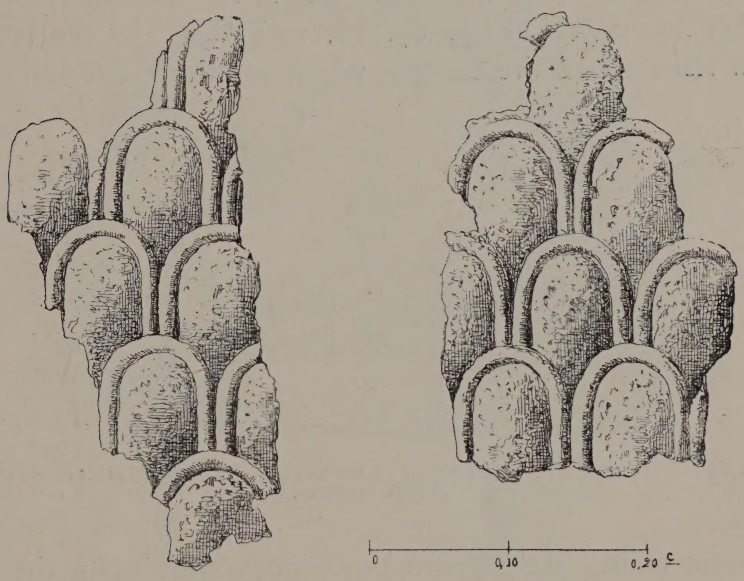


FIG. 72.—Sheath of a cedar-wood mast, bronze.

of the back of the tablet is nothing but a long enumeration of the gifts made to the shrine of Samas by the reigning king and his predecessors.

This column has both capital and base. The former cannot have been of stone; a heavy block of basalt or even of limestone would be quite out of place in such a situation. As for the base it is hardly more than a repetition of the capital, and must have been of the same material; and that material was metal, the only substance that, when bent by the hand or beaten by the hammer, takes almost of its own motion those graceful curves that we call *volutes*.

We believe then in a bronze capital gilded. Under the volutes three rings, or *astragali*, may be seen. By their means the capital was allied to the shaft. The former consisted of two volutes between which appeared a vertical point resembling one of the angles of a triangle. The base is the same except that it has no point, and that the rings are in contact with the ground instead of with the shaft. These volutes may also be perceived on the table in front of the tabernacle, where they support the large disk by which the sun-god is symbolized.

Before quitting this tablet we may point to another difference between the column of Sippara and the shafts of the same material and proportions that we have encountered in the Assyrian bas-reliefs (Figs. 67, 68, and 69). In the latter the column rises above the canopy, which is attached to its shaft by

Fig. 73.—Interior of a house supported by wooden pillars; from the gates of Balawat. British Museum.

brackets or nails. At Sippara the canopy rests upon the capital itself. The same arrangement may be found in Assyrian representations of these light structures; it will suffice to give one example taken from the gates of Balawat (Fig. 73). Here, too, the proportions of the columns prove them to have been of wood. They do not rise above the entablature. The architrave rests upon them, and, as in Greece and Egypt, its immediate weight is borne by abaci.

At present our aim is to prove that Assyria derived from Chaldæa the first idea of those tall and slender columns, the shafts of which were of wood sheathed in metal, and the capitals of the latter material. The graceful and original forms of Chaldæan art would have prepared the way for a columnar architecture in stone, had that material been forthcoming. Babylon,

however, saw no such architecture. Her plastic genius never came under the influence that would have led her to import stone from abroad; and the grace and variety of the orders remained unknown to her builders. Like Egypt, Chaldæa gave lessons but received none. The forms of her art are to be explained by the inborn characteristics of her people and the natural conditions among which they found themselves placed.

In Assyria these conditions were rather different. The stone column was used there, but used in a timid and hesitating fashion. It never reached the freedom and independence that would have

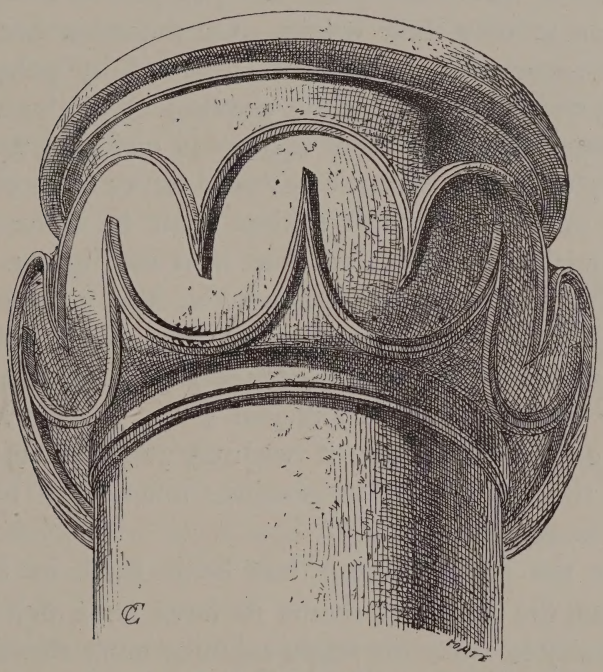


FIG. 74.—Assyrian capital, in perspective; compiled from Place.

characterized it had it arisen naturally from the demands of construction.[1]

We only possess one column, or rather one fragment of a column, from Assyria, and that was found by M. Place at Khorsabad (Fig. 74). It is a block of carefully worked and carved limestone about forty inches high, and including both the capital and the upper part of the shaft in its single piece.

[1] In this connection Sir H. LAYARD makes an observation to which the attention of the artist should be drawn. Whenever pictures of *Belshazzar's Feast* and the *Last Night of Babylon* are painted massive Egyptian pillars are introduced: nothing could be more contrary to the facts (*Discoveries*, p. 581).

Such a combination could not long exist in architectonic systems in which the stone column played its true part. It is a survival from the use of wood. Another characteristic feature is the complete absence both from this fragment and from the columns in the sculptured reliefs of vertical lines or divisions of any kind, no trace of a fluted or polygonal shaft has been found.[1]

In writing the history of the Egyptian column we explained how the natural desire for as much light as possible led the architects of Beni-Hassan to transform the square pier, first into an octagonal prism, secondly into one with sixteen sides.[2] And to this progressive elaboration of the polyhedric shaft the flutes seemed to us to owe their origin. On the other hand, with tall and slender supports such as those afforded by palm trunks no necessity for reduction and for the shaving of angles would arise, and those flutes whose peculiar section is owing to the desire for a happy play of light and shadow, would never have been thought of. If we imitate a natural timber shaft in stone we have a smooth cylindrical column like that seen in Fig. 74.

Again, the shafts of the columns in the bas-reliefs, appear slender in comparison with those of Egypt, or with the doric shafts of the oldest Greek temples (see Fig. 41 and 42). In the fragmentary column from Khorsabad (Fig. 74) we have only a small part of the shaft but if we may judge from the feeble salience of the capital, its proportions must have been slender rather than heavy and massive.

Wherever the stone column has been used in buildings of mediocre size, the architect seems to have been driven by some optical necessity to make his angle columns more thickset than the other supports. Thus it was in Assyria, in the little temple at Kouyundjik (Fig. 42), where the outer columns are sensibly thicker than those between them; at Khorsabad (Fig. 41) the same result was obtained by rather different means. The edifice represented in this bas-relief bears no little similarity to certain Egyptian temples and to the Greek temple *in antis*.[3] The

[1] M. Place, indeed, encountered an octagonal column on the mound of Karamles, but the general character of the objects found in that excavation led him to conclude positively that the column in question was a relic from the Parthian or Sassanide epoch (*Ninive*, vol. ii. pp. 169, 170).

[2] *History of Art in Ancient Egypt*, vol. ii. p. 95.

[3] *Ibid.* vol. i. p. 397, fig. 230; and vol. ii. p. 105, fig. 84.

strength of these angular piers contrasts happily with the elegance of the columns between them. The latter are widely spaced, and, as in some Egyptian buildings, the architrave is but a horizontal continuation of the corner piers.

If we analyse the column and examine its three parts separately we shall be led to similar conclusions. The stone column no doubt bore the architrave upon its capital wherever it was used, and both in Chaldæa and Assyria we find the same arrangement in those light structures which we have classed as belonging to the architecture of the tent (Figs. 70 and 72). The origin of the forms employed in stone buildings is most clearly shewn by the frequent occurrence of the volute, a curvilinear element suggested by the use and peculiar properties of metal.

We find these volutes everywhere, upon shafts of stone and wood indifferently. We are tempted to think, when we examine the details of our Fig. 67, that the first idea of them was taken from the horns of the ibex or the wild goat. The column on the right of this cut bears a fir cone between its volutes, those on the left have small tablets on which are perched the very animals whose heads are armed with these horns.

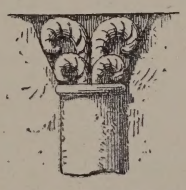


FIG. 75.—Capital; from a small temple.

However this may be, the form in question, like all others borrowed from nature by man, was soon modified and developed by art. The curve was prolonged and turned in upon itself. In one of the capitals of the little temple represented at Kouyundjik (Fig. 42), two pairs of these horns may be recognized one above the other (Fig. 75), but nowhere else do we find such an arrangement. Whether the column be of wood, as in the Sippara tablet (Fig. 71), or of stone, as in those buildings in which the weight and solidity of the entablature points decisively to that material (Figs. 41 and 42), we find a volute in universal use that differs but slightly in its general physiognomy from the familiar ornament of the Ionic capital.

Let us revert for a moment to the country house or palace of which we gave a general view in Fig. 39. We shall there find on the highest part of the building an open loggia supported by small columns many times repeated. We reproduce this part of the relief on a larger scale (Fig. 76), so that its details may be more

clearly seen. A very slight familiarity with the graphic processes

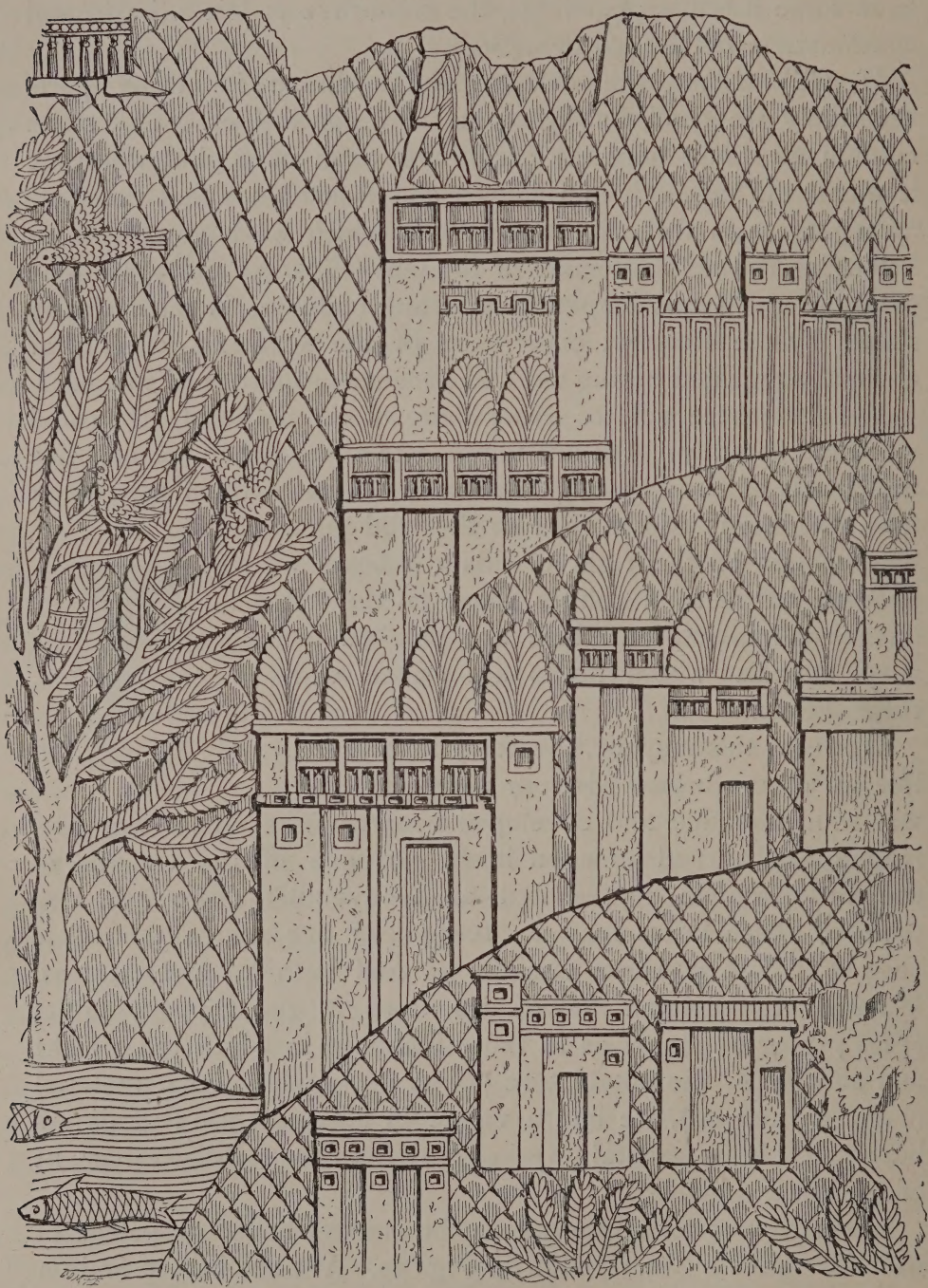


Fig. 76.—View of a palace; from Layard.

of the Assyrians is sufficient to inform the reader that the kind of

trellis work with which the bed of the relief is covered is significant of a mountainous country. The palace rises on the banks of a river, which is indicated by the sinuous lines in the right lower corner. The buildings themselves—which are dominated here and there by the round tops of trees, planted, we may suppose, in the inner courts—stand upon mounds at various heights above the plain. The lowest of these look like isolated structures, such as the advanced works of a fortress. Next comes a line of towers, and then the artificial hill crowned by the palace properly speaking. The façade of the latter is flanked by tall and salient towers, across whose summits runs the open gallery to which we have referred.[1] This is supported by numerous columns which must by their general arrangement and spacing, have been of wood. The gallery consisted, in all probability, of a platform upheld by trunks of trees, either squared or left in the rough and surmounted by capitals sheathed in beaten bronze.

The volute is here quite simple in shape; elsewhere we find it doubled, as it were, so that four volutes occur between the astragali and the abacus (Figs. 42 and 77).[2] In other examples, again, it is elongated upwards until it takes a shape differing but little from the acanthus leaves of the Corinthian capital (Fig. 78).[3]

This volute is found all over Assyria and Chaldæa. It decorates the angles of the small temple represented on the stone known as Lord Aberdeen's Black Stone (Fig. 79). It occurs also on many of the ivories, but these, perhaps, are for the most part Phœnician. But in any case the Assyrians made constant use of it in the decoration of their furniture. In an ivory plaque, of which the British Museum possesses several examples, we find a man standing and grasping a lotus stem in his left hand (Fig. 80). This stem

[1] The profiles of the capitals in this gallery led Sir H. LAYARD to speak of "small pillars with capitals in the form of the Ionic volute" (*Discoveries*, p. 119) (?).

[2] A similar arrangement of volutes may be found on the rough columns engraved upon one of the ivory plaques found at Nimroud (LAYARD, *Monuments*, &c., first series, plate 88, fig. 3).

[3] We reproduce this capital from RAWLINSON'S *Five Great Monarchies* (vol. i. p. 333); but we should have liked to be able to refer either to the relief in which it occurs, or to the original design which must have been made in the case of those slabs which had to be left at Nineveh. We have succeeded in finding neither the relief nor the drawing, so that we cannot guarantee the fidelity of the image.

rests upon a support which bears a strong resemblance to the Sippara capital (Fig. 70); it has two volutes separated by a sharp point. The fondness of the Assyrians for these particular

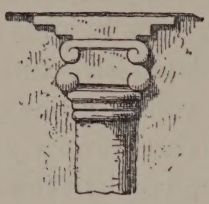


Fig. 77.—Capital; from a small temple.

Fig. 78.—Capital.

curves is also betrayed in that religious and symbolic device which has been sometimes called the *Tree of Life*. Some day, perhaps, the exact significance of this emblem may be explained, we are content to point out the variety and happy arrangement

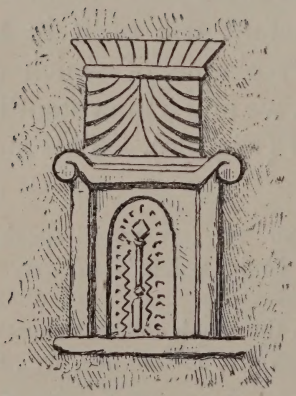


Fig. 79.—Chaldæan tabernacle.

Fig. 80.—Ivory plaque found at Nimroud. Actual size. British Museum.

of the sinuous lines which surround and enframe the richly decorated pilaster that acts as its stem. We gave one specimen of this tree in Fig. 8; we now give another (Fig. 81). The

astragali, the ibex horns and the volutes, may all be easily recognized here.

The only stone capital that has come down to us has, indeed no volutes (Fig. 74), but it is characterized by the same taste for flowing lines and rounded forms. Its general section is that of a cyma reversa surmounted by a flattened torus, and its appearance that of a vase decorated with curvilinear and geometrical tracery. There is both originality and beauty in the contours of the profile and the arrangement of the tracery; the section as a whole is not unlike that of the inverted bell-shaped capitals at Karnac.[1]

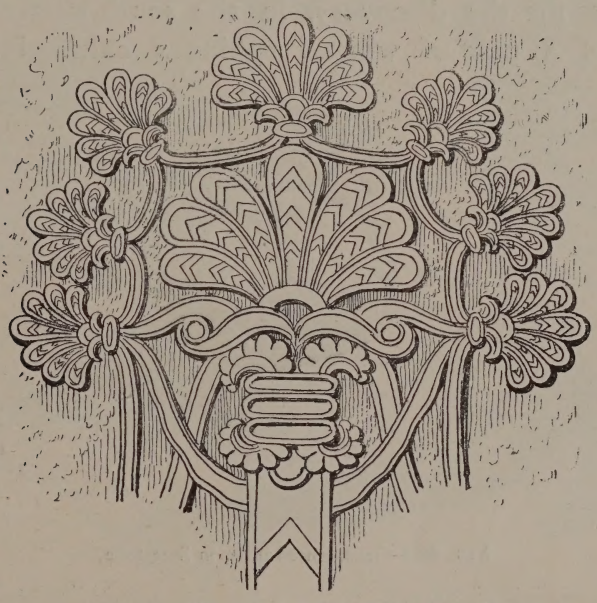


FIG. 81.—The *Tree of Life;* from Layard.

This type must have been in frequent use, as we find it repeated in four bases found still in place in front of the palace of Sennacherib by Sir Henry Layard. They were of limestone and rested upon plinths and a pavement of the same material (Fig. 82).[2] In these the design of the ornament is a little more complicated than the festoon on the Khorsabad capital, but the principle is the same and both objects belong to one narrow class.

[1] See *Art in Ancient Egypt*, vol. ii. p. 120, fig. 95.

[2] LAYARD forgets to give the height of this base: he is content to tell us that its greatest diameter is 2 feet 7 inches, and its smallest 11½ inches. This latter measurement must have been taken at the junction with the shaft (*Discoveries*, p. 590).

We again encounter this same base with its opposing curves in a curious monument discovered at Kouyundjik by Mr. George Smith.[1] This is a small and carefully executed model, in yellow-stone, of a winged human-headed bull, supporting on his back a vase or base similar in design to that figured above. This little object must have served as a model for the carvers engaged upon the palace walls. We shall not here stop to examine the attributes and ornaments of the bull, they are well shown in our Figs. 83 and 84, and their types are known by many other examples. Our aim is to show that we have rightly described the uses to which it was put. These might have remained obscure but for the discovery, in the south-western palace at Nimroud, of a pair of winged sphinxes, calcined by fire but

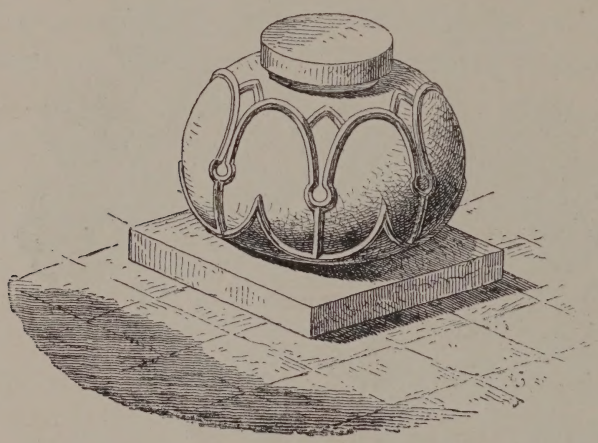


Fig. 82.—Ornamented base, in limestone.

still in their places between two huge lions at one of the doors. Before their contours disappeared—and they rapidly crumbled away upon contact with the air.—Layard had time to make a drawing of the one that had suffered least (Fig. 85). In his description he says that between the two wings was a sort of plateau, "intended to carry the base of a column."[2]

Surprised at not finding any trace of the column itself, he gives out another conjecture: that these sphinxes were altars upon

[1] George Smith, *Assyrian Discoveries*, sixth edition, 8vo. 1876, p. 431.

[2] Layard, *Nineveh*, vol. i. p. 349, at a little distance the explorer found the bodies of two lions placed back to back, which seemed to have formed a pedestal of the same kind. Their heads were wanting, and the whole group had suffered so much from fire, that it was impossible either to carry it off or to make a satisfactory drawing from it (*ibid.* p. 351).

which offerings to the gods, or presents to the king were placed. This hypothesis encounters many objections. We may easily account for the disappearance of the column by supposing it to have been of wood. If it was stone, it may have been carried off for use as a roller by the inhabitants of the neighbouring villages, before that part of the building to which it belonged was so completely engulfed and hidden by the ruins as it afterwards became.[1] Moreover we can point to a certain number of Assyrian altars, and their shapes are very different from this.

FIG. 83.—Model of a base, side view. Actual size.

FIG. 84.—The same, seen from in front.

Finally, all our doubts are removed by a bas-relief from the palace of Assurbanipal, which is now in the British Museum (Fig. 86). The upper part of this carved picture is destroyed, but enough remains to show that it reproduced the façade of some richly decorated building. Four columns supported on the backs of so many lions, and two flat pilasters upheld in the same fashion

[1] This suggestion seems inconsistent with the state of the ruin at the spot where the discovery was made. Sir Henry Layard describes these sphinxes as buried in charcoal, and so calcined by the fire that they fell into minute fragments soon after exposure to the air. Anything carried on their backs must have fallen at the time of the conflagration, and, if a stone column, it would have been found under the charcoal.—ED.

by winged griffins, may readily be distinguished. That these griffins are not repeated on the left of the relief, is due perhaps to the haste or laziness of the sculptor. He may have thought he had done enough when he had shown once for all how these

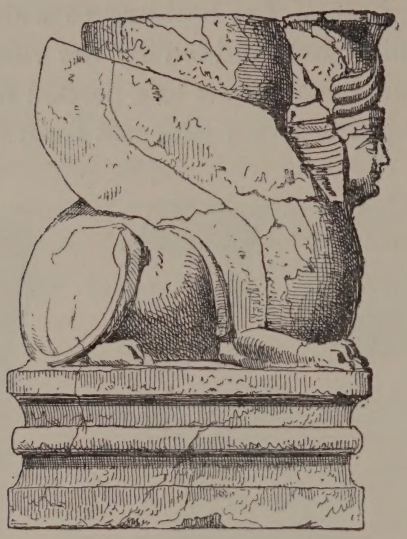


Fig. 85.—Winged Sphinx carrying the base of a column ; from Layard.

pedestals were composed. However this may have been, the lions in this relief play exactly the same *rôle* as that attributed by us to the little model found by George Smith, and to the winged sphinx discovered by Sir Henry Layard before one of the doors at

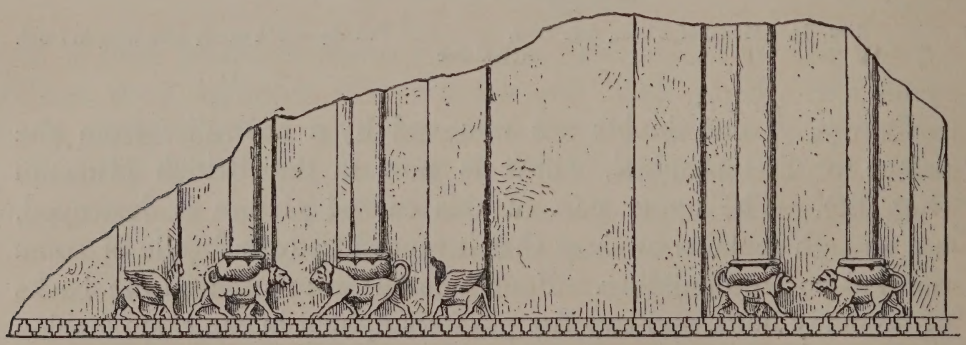
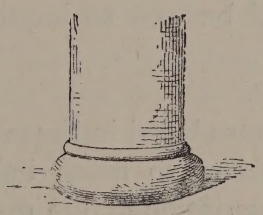


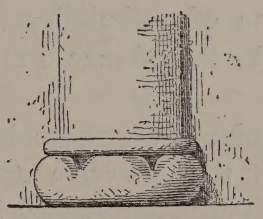
Fig. 86.—Façade of an Assyrian building ; from a bas-relief in the British Museum. Height 10 inches.

Nimroud. A base in the form of a vase or cushion is inserted between the back of the animal and the bottom of the shaft. In the pilaster—if we may believe that the artist took no liberties

with fact—the junction is direct without the interposition of any ornamental motive.

In what M. Place calls the state doorways (*portes ornées*) of Khorsabad, the arches spring from the backs of the great mitred bulls that guard the entrance.[1] But, whether the columns rose from the backs of animals real or fantastic, they always seem to to have had a base. Almost the only instance of its absence is in the open gallery in Fig. 76, and there, perhaps, they are hidden by a balustrade. Everywhere else we find a more or less ornamental member interposed between the shaft and the ground. At Khorsabad (Fig. 41) it is a simple torus (Fig. 87), at Kouyundjik (Fig. 42) it is a kind of cushion (Fig. 88), which we find represented in not a few of the bas-reliefs. The curves bear a distant resemblance to the volutes of a capital ; above this base appears a ring or astragal, the origin of which may be easily guessed. The





FIGS. 87, 88.—Bases of columns ; from the bas-reliefs.

original timber column, the newly felled tree that was set up to support the roof of a tent or a house, must have been placed upon a block of stone or wood, to which it was joined, in some degree, by hollowing out the latter and setting the foot of the timber beam in the hollow, and then hiding the junction by those reed bands that, as travellers tell us, were still used for the same purpose in the last years of Babylon.[2] In time a ring of metal would take the place of the reeds, and when stone columns came to be used, a feature which was at first a necessity, or, at least, a useful expedient and a guarantee of duration and solidity, came at last to be simply an ornament.

We have now studied the Assyrian column as a whole and in detail. Most of its features seem to us to be survivals from the methods and processes of what we have called the architecture

[1] PLACE, *Ninive*, vol. iii. plate 11.

[2] STRABO, xvi. 1, 5.

of the tent. The stone column had no place in those structures of crude brick of which the real national architecture of Mesopotamia consisted; it was not at home there; the surrounding conditions were unfavourable to its development. And yet, in time, it did, as we have seen, put in a rare appearance, at least in the case of that one of the two sister nations by which a sufficient supply of stone could be obtained, but even then it filled an ornamental and auxiliary rather than a vital function. Its remains are only to be found by patient search, and even in the bas-reliefs its representations are few and far between. By making diligent use of these two channels of information archæology has succeeded in demonstrating the existence of the Assyrian column and describing its forms, but at the same time it has been compelled to recognize how narrow was its use, especially in the great structures on which Mesopotamian builders lavished all the resources of their art. In those it was employed mainly for the decoration of outbuildings, and it will be well to inquire how it acquitted itself of such a task.

The column seems to have been introduced in those gateways to which the Assyrian architect attached so much importance.[1] Read carefully Sir Henry Layard's description of his discovery of two sphinxes upon one of the façades of the south-western palace at Kouyundjik (Fig. 83); he gives no plan of the passage where he found them, but his narrative[2] suggests the existence of some kind of porch in front of the large opening. It must have been upheld by a pair of columns on the backs of the two sphinxes, and may have consisted of one of those wooden canopies which are so common in the modern architecture of the East.[3]

We are inclined to recognize a pent house of this kind, but

[1] Thomas has placed one of these porches in his restoration of Sargon's palace at Khorsabad. It is supported by two columns, and serves to mark one of the entrances to the harem. (PLACE, *Ninive*, vol. iii. plate 37 *bis*.)

[2] LAYARD, *Nineveh*, vol. i. pp. 349, 350.

[3] Numerous examples are figured in COSTE and FLANDIN'S *Perse Moderne*, plates 3, 7, 9, 26, 27, 54, &c. They cast a wide shadow in front of the doorways, and sometimes run along the whole length of the façade. Some little support to M. Perrot's theory is afforded by a circumstance on which Layard dwells strongly in the passage referred to above, namely, that the sphinxes were found buried over their heads in charcoal, which may very well have been the remains of such a porch; its quantity seems too great for those of a ceiling.—ED.

of more complicated construction in the Kouyundjik bas-relief figured above (Fig. 83). No door is shown, but that, perhaps, is due to the sculptor's inability to suggest a void, or the two central perpendicular lines may have been joined by a horizontal one on the upper part of the relief, which is lost, and thus a doorway indicated ; it would then have a couple of pilasters and a couple of columns on each flank.

In classic architecture we find nothing that can be compared with this curious notion of placing columns and pilasters on the backs of real or imaginary animals, on a lion, a winged bull, or a sphinx. In the modern East, however, it is still done. The throne of the Shah, at Teheran, is supported by columns which, in their turn, stand on the backs of lions. Singularly enough the same idea found favour with European architects in the middle ages, who often made use of it in the porches of their Christian cathedrals.[1] Hence, the old formula often found in judicial documents, *sedente inter leones*,—sitting between the lions—which was used of episcopal judgments delivered in the church porch. In Italy, in buildings of the Lombardic style, these lions are to be found in great numbers and in this same situation. At Modena there is one in the south porch of the cathedral that strongly reminded me by its style and handling of the figures now existing in Cappadocia, of the lion at Euiuk, for example ; in both instances it is extended on the ground with its fore paws laid upon some beast it has caught.[2] We could hardly name a motive more dear to Oriental art than this. Between the predilections of the modern East and those of Assyria and Chaldæa there are many such analogies. We shall not try to explain them ; we shall be content with pointing them out as they present themselves.

Various facts observed by Sir Henry Layard and the late George Smith, show that the column was often employed to form covered alleys stretching from a door to the edge of the platform, doubtless to the landings on which the stepped or inclined approaches to the palace came to an end. Sir Henry Layard[3] found four bases of limestone (Fig. 82) on the north side of

[1] This coincidence struck Professor Rawlinson, who compares one of these Assyrian columns to a column in the porch of the Cathedral of Trent. He reproduces them both in his *Five Great Monarchies*, vol. i. p. 313.

[2] See PERROT and GUILLAUME, *Exploration archéologique de la Galatie*, vol. ii. pl. 57.

[3] *Discoveries*, p. 590.

Sennacherib's palace. They were in couples, one couple close to the palace wall, the other in a line with it but some eight-and-twenty yards farther from the building. In each pair the distance from centre to centre was 9 feet 3 inches. With such a width the covered way may very well have been roofed with wood, a hypothesis which is supported by the discovery, at the same point, of the remains of crude brick walls. The columns would mark in all likelihood the two extremities of the passage. As for the other conjecture thrown out by the explorer, it seems to us to be much less probable. He asks whether these bases may not have been the pedestals of statues. Many Assyrian statues have been found together with their pedestals, and these are always simple in the extreme and without any kind of ornament. Moreover, the statues themselves were made rather to be set up against a wall than to pass an independent existence in an open court-yard.

Moreover, George Smith saw two of these bases in place at one of the entrances to the palace of Assurbanipal. Unfortunately he gives no drawing and his description is wanting in clearness, but he seems to have noticed the traces left by a cylindrical shaft on the upper surface of one base; his expression, "a flat circle to receive the column," evidently means that the latter was sunk into the substance of the base.[1] Here, no doubt was the end of a gallery, like that in front of Sennacherib's palace.

There must in all probability have been other remains of these columns besides those noticed by the English explorer, but at Khorsabad alone were the excavations superintended by a professional architect, there alone were they watched by the trained eye of a man capable of giving its true meaning and value to every detail of a ruinous building. At Nimroud, at Kouyundjik, at Nebbi-Younas, many interesting traces of ancient arrangements may have been obliterated in the course of the excavations without those who stood by having the least suspicion of their significance.

We might perhaps, if it were worth while, come upon further representations of columns on engraved stones, on ivories, and bronzes,[2] but upon such small objects forms are indicated in a

[1] GEORGE SMITH, *Assyrian Discoveries*, p. 431.

[2] One curious example of this is figured in the work of M. CHIPIEZ, *Histoire critique de l'Origine et de la Formation des Ordres grecs*, p. 20. See also LAYARD,

very summary fashion, and, besides, they would be nothing more than curtailed repetitions of motives shown in more detail and upon a larger scale elsewhere. Our readers may fairly judge, from the examples we have placed before them, of the appearance of those columns of wood and metal, which the Chaldæans used in the light and graceful tabernacles figured for us on the relief from Sippara, and of the more durable stone supports of the Assyrians. Long habit and an excessive respect for tradition, hindered the latter from turning the column to its fullest use. They stopped half way. They employed the feature with such timidity that we can point to nothing that can be called an Assyrian order. They produced nothing to compare with the rich and varied colonnades that we admired in the hypostyle halls of Egypt. And yet we cannot say that they showed any lack of originality or invention in their choice of decorations for the bases and capitals of their columns. Their favourite motive seems to have been the volute, to which, however, they gave an endless variety. They used it, no doubt, in many ways that now escape us, and by applying it now to this purpose and now to that, and sometimes with the happiest results, they accumulated an amount of experience as to the value of those graceful curves which was of great value to their successors. Who those successors were and how they carried to perfection a form which had its origin on the banks of the Tigris and Euphrates, will be shown in the course of our history.

§ 5.—*The Arch.*

IN the preceding pages we have determined the *rôle* played by the column in Assyria, and have explained that in spite of the care and taste lavished upon some of its details, it never rose above the rank of a secondary and subordinate member. There is nothing, then, to surprise us in the fact that the Assyrian architect never placed his arches or vaults upon columns or piers; he seems never to have had a glimpse of the great possibilities such a procedure involved, a procedure from which upon the very soil of

Discoveries, p. 444, where a bas-relief from the palace of Sennacherib is figured, upon which appears a coffer supported by a foot in the shape of a column, which ends in a regular volute.

the East, his remote descendants were to evolve the architecture of the Byzantine church and the Arab mosque. His archivolts and the pendentives of his vaults always rest upon thick walls, and yet almost every variety of the simple arch or tunnel-vault are to be found among the ruins of his buildings.

Like all the other forms of Assyrian architecture the arch was invented in Chaldæa. The use of small sized materials must have led to its early discovery in that country. But the only arches now standing occur in the better preserved monuments of Assyria. On the other hand the tombs of Lower Chaldæa furnish

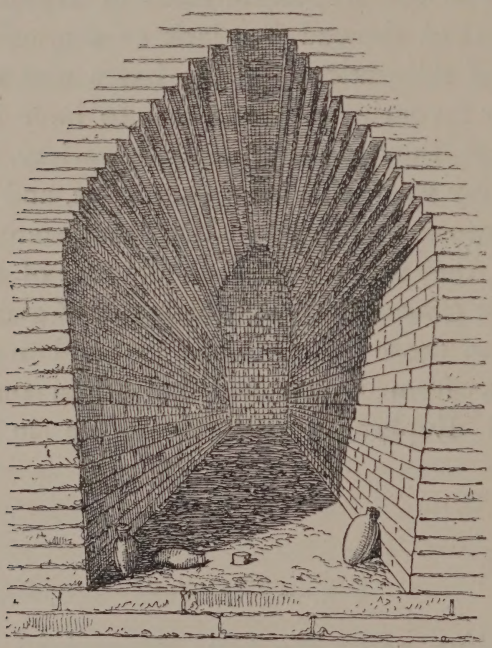


Fig. 89.—Tomb-chamber at Mugheir ; from Taylor.

more than one example of that false, corbelled or off-set vault, that we have already encountered in Egypt.[1] The chamber figured below is taken from the necropolis of Mugheir, formerly "Ur of the Chaldees." It is built of crude brick bound with mud. The vault is supported by walls sloping upwards and outwards like those of a modern tunnel (Fig. 89).[2]

[1] *Art in Ancient Egypt*, vol. ii. p. 82.

[2] This chamber is 7 feet long, 3 feet 7 inches wide, and 5 feet high. Taylor, *Journal of the Royal Asiatic Society*, vol. xv. p. 272.

Such a method of construction is only adapted to buildings of small dimensions; it could not be used for chambers with wide roofs, or where any great weight was to be upheld. The arches upon which, according to both Strabo and Diodorus,[1] the hanging gardens of Babylon were supported, must have been real centred arches. As to whether they were of pisé, like those of Khorsabad, the Greek writers tell us nothing. From what we know of the habits of the Chaldæan builder we may conclude that they were true arches with voussoirs either of bricks burnt in the kiln, or so well dried that they were almost as hard and durable as those that had passed through the fire. This conjecture is confirmed by the fact that the structures in question lasted till the Macedonian conquest. Strabo and Diodorus speak of the great temple of Bel as so ruinous that its original height could not be guessed, even approximatively. It was otherwise with the hanging gardens. Of these they give the measurements, on plan, of the platforms and piers, together with their heights, and the heights of the arches. We should find it difficult to explain the preciseness of these measurements and their agreement one with another, unless we supposed that both writers had some exact authority, such as one of the companions or historians of Alexander, to refer to. The kings of Persia lived at Babylon for a part of the year. These princes may well have been indifferent to the preservation of the national fanes, they may even have hastened their destruction, as Xerxes is said to have done, in order to punish and humiliate the rebellious Babylonians. But in their own interest they would see that proper care was taken of those hanging gardens by which their stay in the city would be rendered more pleasant than it would otherwise have been, from whose lofty platforms their watchful eyes could roam over the city and the adjoining plain, and follow the course of the great river until it disappeared on the south amid groves of waving palm. After the rise of Seleucia and Ctesiphon, however, the gardens would rapidly hasten to decay, but they must have been solidly built in the first instance to last as long as they did. The pisé vaults of the Ninevite palaces could never have stood so well. In spite of the layers of lead and bitumen which, as Diodorus tells us, were spread upon their terraces, the summer rains must in time have found their way into their walls and set up a process of disintegra-

[1] STRABO, xvi. 1, 5. DIODORUS, ii. 10.

tion which could have but one end. Real brick with good mortar could alone resist such influences, and those, no doubt, were the materials used in the Babylonian gardens. If their substructures should ever be found and laid open, we have little doubt that arches as carefully built as those of the Assyrian ruins will be brought to light.

The gateways of the town built by Sargon at the foot of his palace mound were roofed with semicircular vaults.[1] In order to study their construction more closely, M. Place demolished one of these arches piece by piece, the one numbered three on his plan.[2] It was already condemned to destruction by the necessity for carrying off its sculptures.

The total height from pavement to keystone, was twenty-four feet six inches, from the centre of the keystone to the springing of the arch itself was eight feet, the total width of the opening, measured at the feet of the caryatides, was fourteen feet four inches.

The bricks had not been burnt in a kiln but they had been subjected to a prolonged desiccation. The system of construction was as simple as possible. The perpendicular side walls passed into the vault without any preparation, and the arch when complete had no inward projection and no structural ornament but the inner faces of the carefully placed voussoirs; as all the bricks were of the same size and shape something more than their slightly trapezoidal form was required to keep them in place, and a softer clay was used to bind them together. With the addition of this rude cement each brick became a long and narrow wedge and determined the curve of the vault in which it was placed. Some idea of the appearance of this triple arch may be formed from the illustration we have compiled from M. Thomas's elevation of an alcove in one of the harem apartments at Khorsabad (Fig. 90). This vault is not in existence, but its component parts were found among the ruins of Sargon's palace.[3]

There is one detail in the decoration of these doorways that should be carefully noted. Wherever the architect makes use of a round-headed opening he reinforces its outlines with a kind of semicircular frieze, to which brilliant colours or bold reliefs

[1] Place, *Ninive*, vol. i. pp. 170-182 and 256-259, vol. iii. plates 9-18.
[2] Place, *Ninive*, vol. iii. plate 2. [3] Place, *Ninive*, vol. i. p. 128.

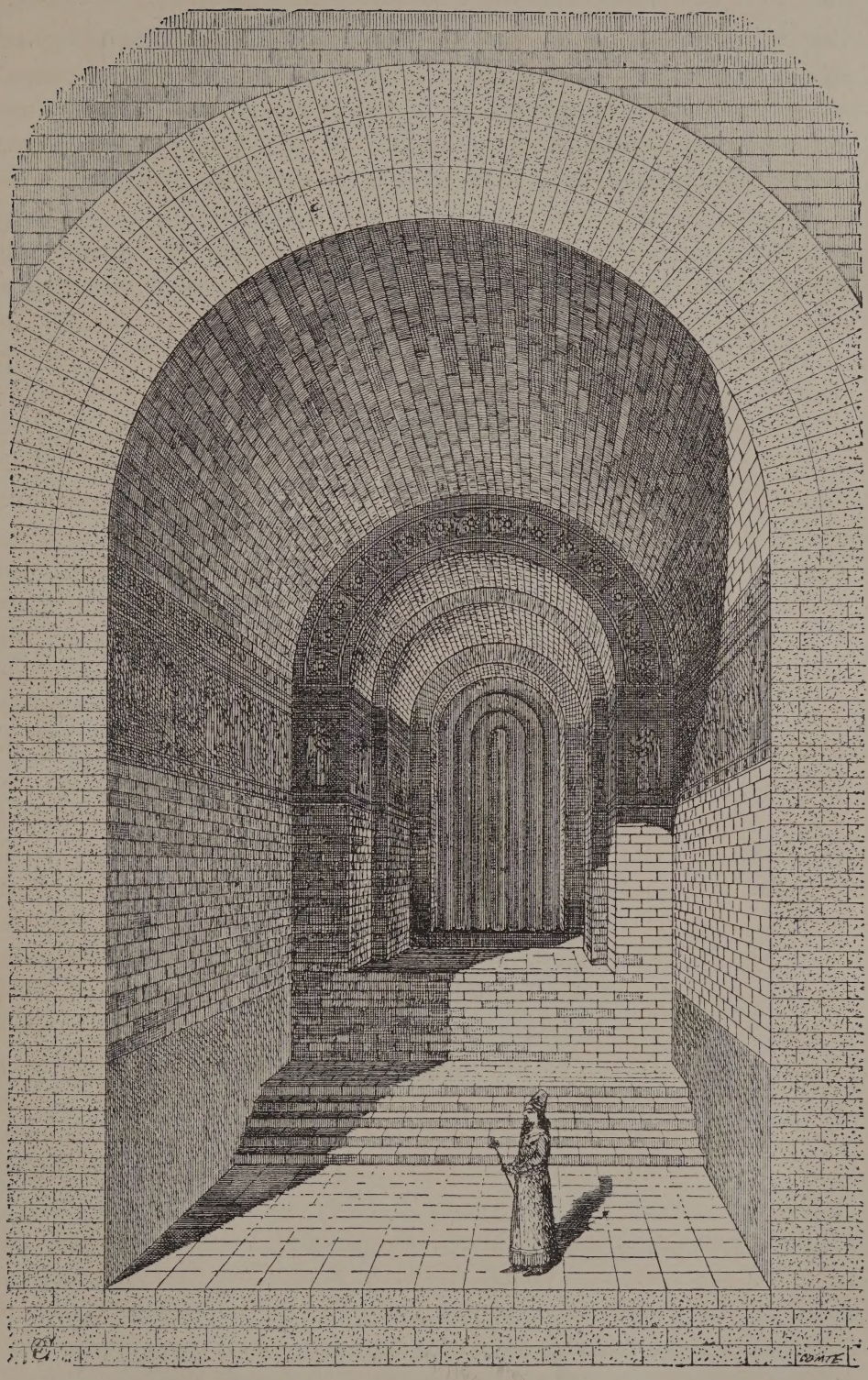


FIG. 90.—Interior of a chamber in the harem of Sargon's palace at Khorsabad ; compiled from Place.

would give no little decorative value. In what M. Place calls *portes ornées*, this ornamental archivolt is of enamelled bricks, in the subordinate entrances it is distinguished from the rest of the wall merely by its salience. In neither case, however, does it end in any kind of impost, it returns horizontally without the arch and forms an ornament along a line corresponding to the spring of the vault within. We give an example of this peculiarly Assyrian arrangement from one of the gateways at

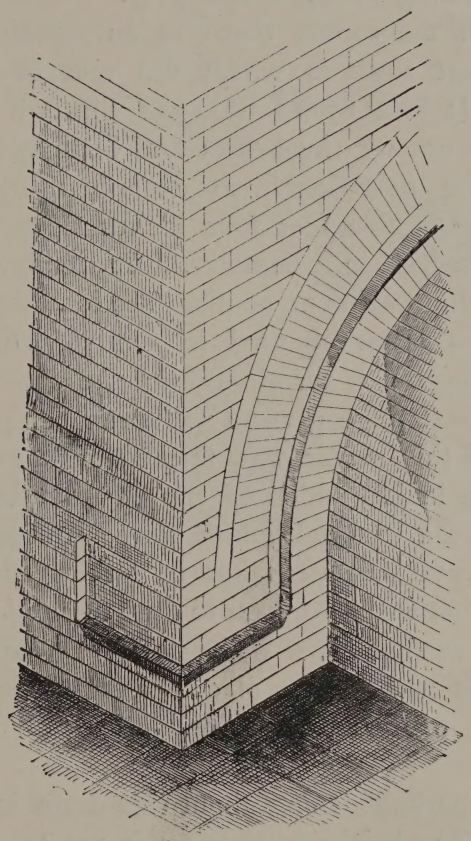


FIG. 91.—Return round the angle of an archivolt in one of the gates of Dour-Saryoukin; compiled from Place.

Dour-Saryoukin (Fig. 91). Nothing like it is to be found, so far as we know, among the buildings of any other ancient people.

From the point of view of the special study on which we are now busy, the inhabited and visible part of an Assyrian building is less interesting than those channels hidden in the substructures which acted as drains. These channels existed

in all the palaces. Layard encountered them at Nimroud and Kouyundjik,[1] but it was at Khorsabad that they were found in the best condition and most carefully studied.[2] We shall make use chiefly of the observations of MM. Place and Thomas in our explanation of a curious system of sewers that does, perhaps, more honour to the Ninevite builder than any other part of his work. Every detail of their construction is full of interest,—the general arrangement, the choice of materials and the various methods of vaulting brought into play.

In nearly all the rooms there is an opening in the middle of the pavement towards which the rest of the floor has a gentle slope. It is a round hole cut through the centre of a square stone set among the bricks and leading to a circular brick conduit. In the first specimen described by M. Place, this descending pipe is five feet four inches deep, and rather more than eleven inches in diameter. It leads into an almost horizontal conduit with a similar section and of the same materials. This latter channel is gently inclined through the whole of its length; it terminates in the main drain of which the cut on the next page gives a section in perspective (Fig. 92).[3]

The floor of this sewer was formed of large limestone slabs overpassing the inside width of the channel by several inches. By this means the internal joints were reduced to a minimum, and a further precaution was taken by placing the slabs in a bath of asphalte, which was also used to coat the oblique channels and the foot of the vertical pipe. The low perpendicular walls upon which the vault was to be placed were built upon the outer edge of these wide slabs. They were of four-inch bricks, carefully laid.

The most remarkable thing about this drain is the construction of the vault. The bricks composing it are trapezoidal in shape, two of their edges being slightly rounded, the one concave, the other convex. The radius of this curve varies with each brick, being governed by its destined place in the vault. These bricks go therefore in pairs, and as there are four courses of bricks on each

[1] Layard, *Nineveh*, vol. i. p. 134; vol. ii. pp. 79 and 261. *Discoveries*, pp. 162-165.

[2] Place, *Ninive*, vol. i. pp. 269-280 and plates 38 and 39.

[3] We have endeavoured to combine M. Thomas's longitudinal elevation, vertical section, and transverse section (Place, *Ninive*, plate 38), in our single cut.

side of the vault, four separate and different moulds would be required, besides a fifth, for a brick of which we shall presently have to speak. The four narrow sides of these bricks differ sensibly one from another. The two curved faces being at different distances from the centre, are of unequal lengths, while, as the lower oblique edge is some inches below the upper in the curve, these two edges have different directions. In their disinclination to use stone voussoirs, the Assyrian builders here found them-

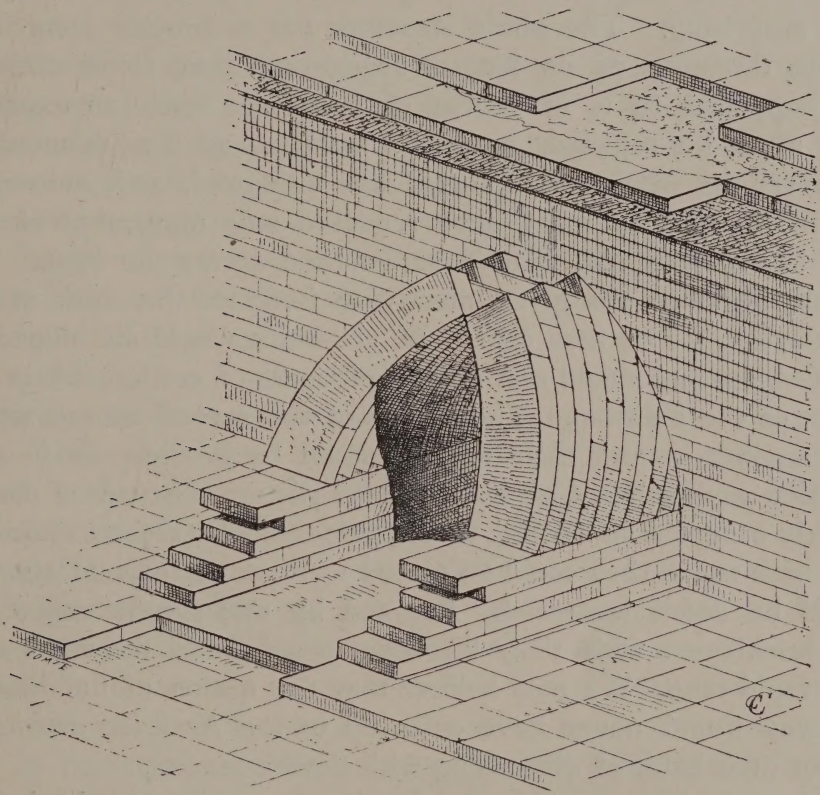


FIG. 92.—Drain at Khorsabad, with pointed arch. Section in perspective.

selves compelled to mould bricks of very complicated form, and the way in which they accomplished their task speaks volumes for their skill.

If we cast a glance at our Fig. 92 the first thing that strikes us is the absence of a keystone to the vault. The two rows of voussoirs that are in full view thrust against each other only by a single sharp edge; there is no keystone between them. In the row immediately behind, however, there is a stone (imperfectly seen in our illustration) that seems to play the part of a key.

Thus we find that only at each alternate vertical course was the arch of burnt and moulded brick complete. The openings left at the summits of the other courses must have been filled in in some way, and, in fact, the line of voids which ran along the top of the extrados was filled in with brick earth, beaten tight and forming the best of keys. So that the vault was completed and consolidated by the same material as that used to make its channel impervious to water.[1]

This vault has another strange singularity which at first is very surprising. The whole structure has a sensible inclination in the direction of its length, suggesting that some accident had happened to it in course of erection. Such an explanation must be rejected, however, because at the moment of discovery the whole arrangement was uninjured, and, moreover, the filling of clay must have rendered any movement of the kind impossible. M. Place's explanation seems the best. He thinks the slope was given merely to facilitate the work of the bricklayers. The first course of voussoirs would be sloped in this fashion, and would rest upon some mass of crude brick in the centre of the building. The bricks of the second course would lean against it, and their weight would be brought in to add cohesion and solidity to the whole structure instead of being entirely occupied in adding to the perpendicular thrust, while the ease with which they could be placed without an internal support would be much increased. Assisted by this simple expedient, two bricklayers with their labourers could build the vault at a very rapid rate. We may believe that the notion of building in this way would never have occurred to the Assyrian architects but for their habit of dispensing with timber centres.

This slope had an effect upon the arrangement of the bricks which should be noticed. In all other vaults, such as those of the city gates, the units are laid upon their longest sides, and a vertical section shows their shortest diameters. Here, on the other hand, the bricks stand on their edges, and their largest surfaces are in contact, on each side, with the next vertical course,

[1] The same process was employed at Nimroud in a drain or water channel, of which Layard gives a sketch (*Discoveries*, p. 164). In connection with these vaults we must remember that a pointed arch has no key properly speaking; the top stone is merely a joint. It looks as if the Assyrian architect had a kind of instinctive appreciation of the fact.

If the full benefit of the natural cohesion between one brick and another was to be obtained, this method of laying them was absolutely necessary.

Internally, the drain we have been studying was four feet eight inches high from the floor to the crown of the vault. Its width was three feet nine inches, and its general slope very slight. It may be followed for a total length of about 220 feet, after which falls of earth have carried away the arch and the whole northern part of the esplanade, so that no trace of the mouth by which it opened on the plain can be traced.

The other sewer described by M. Place may be more summarily dismissed. In spite of their drawings and minute descriptions, explorers have not yet succeeded in explaining the eccentricities of construction it presents. It has two channels, one above the other, which are similar neither in slope nor section. Moreover this double sewer is abruptly interrupted in the middle of the artificial mound through which it runs. Must we believe that it was never finished or used? We shall not attempt to answer this question, but shall content ourselves with pointing to the similarities between this tunnel and the last described. The same large stone slabs upon a layer of bitumen, the same inclination of the body of the vault, the same bricks formed in different moulds according to their place in the vault, are found in each.

Our Fig. 93 shows the two channels and their position one above the other. The pavement of the terrace, which consists of a double bed of large bricks, rests upon the extrados of the upper channel. This vault is semicircular; it has three voussoirs on each side, which, with the key, make seven in each vertical course. But in consequence either of an error in measurement or of a mistake in calculating the shrinking of the bricks, there was a gap between the third voussoir on the right and the key. This gap was filled in by the insertion of a stone cut into the shape of a wedge. But for this fault—which, however, had no appreciable effect upon its solidity—the vault would be perfect.[1] The narrow triangular opening of the lower channel may be seen below it.

The semicircular vault gradually and insensibly changes into an elliptical one. The side walls become lower, at each yard their height is diminished by the thickness of a brick, and finally they

[1] The slope, the height, and the width of this channel are not the same throughout. In some places it is wide enough to allow two men to walk abreast in it.

disappear about the middle of the total length. At the point shown in our Fig. 94 the arch has lost its supports and rests directly upon the pavement of the channel. Its ellipse is composed of eight voussoirs, four on each side, and a key with a small wedge-shaped stone voussoir on each side of it. Between

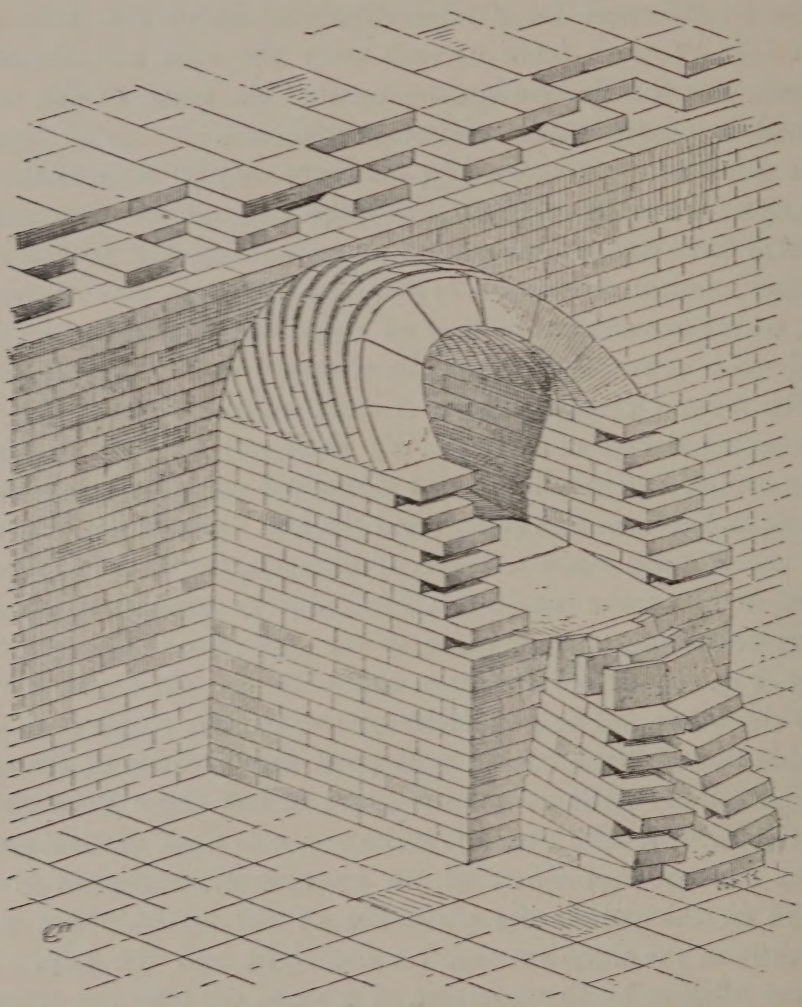


Fig. 93.—Sewer at Khorsabad, with semicircular vault; compiled from Place.

the two points shown in our Figs. 93 and 94 the upper and lower sewers have become one, the vaulted roof of the first and the paved floor of the second being continued in a single tunnel. At the point where this tunnel comes to a sudden end it is closed by a wall, through which two small openings are pierced to serve as outlets for the sewer within (Fig. 94).

At different points on the Khorsabad mound, M. Place found other sewers, some with depressed, some with basket-handle vaults, while, at Nimroud, channels were discovered which were square in section and covered with large slabs of lime-stone.[1] The Assyrian architects seem, however, to have had a decided preference for the vault in such a situation. They expected it to give greater solidity, and in that they were not mistaken. The vaults of burnt brick, though set without cement, have remained unshaken and close in their joints, and the sewers they inclose are the only voids that have remained clear in the ruins of the buildings to which they belong.

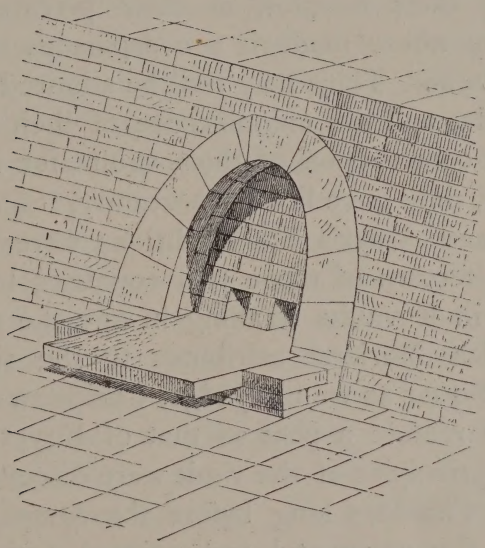


FIG. 94.—Sewer at Khorsabad, with elliptical vault; compiled from Place.

We may, perhaps, be accused of dwelling too minutely upon these Assyrian vaults. We have done so because there is no question more interesting or more novel in the whole history of architecture than the true origin of the keyed vault and the different uses to which it has been put. Ottfried Müller looked upon the Etruscans as the inventors of the vault; he believed that the Greek builders learnt the secret from the early inhabitants of Italy,[2] and that the arches of the Roman *Cloaca Maxima* built by the Tuscan architects of the Tarquins, were the oldest that

[1] LAYARD, *Nineveh*, vol. i. p. 79.

[2] OTTFRIED MÜLLER, *Handbuch aer Archäologie der Kunst*, § 107 and 168 (3rd edition).

had come down to us from antiquity. The archæological discoveries of the last fifty years have singularly falsified his opinion and given an age to the vault never before suspected. Even in the days of the Ancient Empire the Egyptians seem to have understood its principle; in any case the architects of Amenophis, of Thothmes, of Rameses, made frequent and skilful use of it long before the Ninevite palaces in which we have found it were erected.[1] But the possession of stones of enormous size enabled the Egyptians to dispense to a great extent with the arch, and we need not be surprised, therefore, that they failed to give it anything like its full development. They kept it in the background, and while using it when necessary in their tombs, in the out-buildings of their temples, in their private dwellings and warehouses, they never made it a conspicuous element of their architectural system. They may well be admired for the majesty of their colonnades and the magnificence of their hypostyle halls, but not for the construction of their vaults, for the imitation of which, moreover, they gave little opportunity.

In Chaldæa and Assyria the conditions were different. Supposing the architecture of those two countries to be yet entire, should we find in it vaults rivalling in age the arch in a tomb at Abydos which Mariette attributes to the sixth dynasty?[2] Probably not. So far as we can judge, Chaldæan civilization does not date from so remote a past as that of Egypt, but it appears certain that the principles of the vault were discovered and put in practice by the Chaldees long before the comparatively modern times in which the segmental and pointed arches of Nineveh were erected. The latter alone are preserved because they have been hidden during all these centuries under the heaped-up ruins of the buildings to which they belonged, while those of Chaldæa have been carried away piece by piece, and their materials used again and again by the modern population of Mesopotamia.

In spite, however, of the absence of such direct evidence, we may affirm without fear that the Chaldæan architects soon discovered the principle of the arch, and used it at least in its simplest and least complex forms. We are led to these conclusions not only by their restriction to small units of construction

[1] *Art in Ancient Egypt*, vol. i. p. 112, and vol. ii. cap. ii. § 4.

[2] *Ibid.* vol. ii. fig. 44.

—a restriction which is sure, sooner or later, to lead to the discovery in question—but also by induction from the monuments we have just been studying. The arches under the hanging gardens of Babylon, the vaults of the sewers and gateways, the domes that covered the great square chambers in the Ninevite palaces—all these were derived, we may be sure, from the ancient civilization. We cannot believe that such consummate skill in the management of a difficult matter was arrived at in a day. The purely empiric knowledge of statics it implies could only have been accumulated by a long series of more or less happy experiments.

Thus only can we explain the ease with which the Assyrian builder surmounted difficulties some of which would have puzzled a modern architect, such as the pisé vaults erected over spacious galleries without any kind of centering, and the domes over square chambers, for which some system of pendentives—that is, of arches or other intermediate forces—by which the base of the cupola could be allied to the top of the supporting wall, must have been contrived. The accurate calculation of forces between the thrust of the vaults and the strength of the retaining walls, the dexterity with which the curves employed are varied and carried insensibly one into the other, the skill with which the artificial materials are prepared for their appointed office, are also surprising. By careful moulding and manipulation the Assyrian builder made his brick voussoirs as well fitted for their work as the cut stone of our day. Each brick had its own shape and size, so that it was assigned in advance a particular place in the vault and its own part in assuring the final stability of the building. In all this we cannot avoid seeing the results of a patient and long-continued process of experiment and education carried on through many centuries in all the workshops of Mesopotamia.

The art of building vaults with small units of construction was, then, carried farther in Mesopotamia than in Egypt; it was there more frankly developed; it was there forced with greater success to supply the place of stone and timber. It was in fact more of an indigenous art in the valley of the Tigris and Euphrates than anywhere else, more inspired by the permanent and unchanging conditions of the country—in a word, more national.

In these days the historian sets himself with devotion to follow in all its involutions the long chain of thought and effort by which man has been led from his primitive barbarism to the well-being of modern civilization, and to his domination—every day more complete and more intelligent—over the minor forces of nature. It is the duty of criticism, as its methods gradually perfect themselves, to add daily to its perspicacity and powers of observation, and to lessen as much as possible the occasions, still so numerous, when the thread of evidence breaks in its hands and the true relations of facts to each other become obscured. Even yet we cannot say for certain to which nation of the ancient world the invention of the arch belongs. In those remote ages the principle may have been discovered more than once or twice in different and distant countries whose inhabitants were busied over the same task. We have no reason to believe that Chaldæa learnt the secret from Egypt, or Etruria from the East. It is none the less true, however, that the unknown architects of Babylon and Nineveh made full use of it at an earlier date and in more intelligent fashion than any of their rivals. To them must be given the credit of being the masters and art-ancestors of the men who built the Pantheon and the Church of Saint Sophia, Santa Maria del Fiore, and Saint Peter's in Rome, and more especially of those great modern engineers to whom the principle of the arch has been a chief element in their success.

§ 6.—*Secondary Forms.*

(*Doors, windows, steles, altars, obelisks, mouldings.*)

We have been obliged to dwell at length on the arch and the column because those two elements of construction are of the greatest importance to all who wish to gain a true idea of Mesopotamian art and of its influence upon neighbouring peoples and over subsequent developments of architecture. On the other hand we shall have very little to say upon what, in speaking of Egyptian art, we called *secondary forms.*[1]

We have already had occasion to speak of some of these, such as windows and doors. We have explained how the nature of his materials and the heat of the climate led the architect to

[1] *Art in Ancient Egypt*, vol. ii. ch. ii.

practically suppress the former, while, on the other hand, he gave extravagant dimensions to the latter. It was to the door that the rooms had mainly to look for the light and air, with which they could not entirely dispense. We have now to give a few details as to the fashion in which these large openings were set in the walls that enframed them. As for salient decorative members—or mouldings, to give them their right name—their list is very short. We shall, however, find them in some variety in a series of little monuments that deserve, perhaps, more attention than they have yet received—we mean altars, steles, and those objects to which the name of *obelisks* has, with some inaccuracy, been given. Some of these objects have no little grace of their own, and serve to prove that what the Chaldæans and Assyrians lacked was neither taste nor invention, but the encouragement that the possession of a kindly material would have given to their genius.

Doorways seem to have been generally crowned with a brick archivolt; round-headed doors occur oftener than any others on the bas-reliefs, but rectangular examples are not wanting (see Fig. 43). In the latter case the lintel must have been of wood, metal, or stone. Naturally the bronze and timber lintels have disappeared, while in but a single instance have the explorers found one of stone, namely that discovered by George Smith at the entrance to a hall in the palace of Sennacherib (Fig. 95). It consists of a block of richly carved limestone. Its sculptures are now much worn, but their motives and firm execution may still be admired. Two winged dragons, with long necks folded like that of a swan, face each other, the narrow space between them being occupied by a large two-handled vase. Above these there is a band of carved foliage, the details of which are lost in the shadow cast by a projecting cornice along the top of the lintel.[1] The necklace round the throat of the right-hand dragon should be noticed.

[1] GEORGE SMITH, *Assyrian Discoveries*, pp. 146, 308, 429. This lintel has been fixed over the south doorway into the Kouyundjik Gallery of the British Museum. When examined in place, the running ornament in the hollow of the cornice will be easily recognised—in spite of the mutilation of its upper edge—as made up of a modified form of the palmette motive, which had its origin in the fan-shaped head of the date palm. The eight plumes of which the ornament consists are each formed of three large leaves or loops and two small pendant ones, the latter affording a means of connecting each plume with those next to it.—ED.

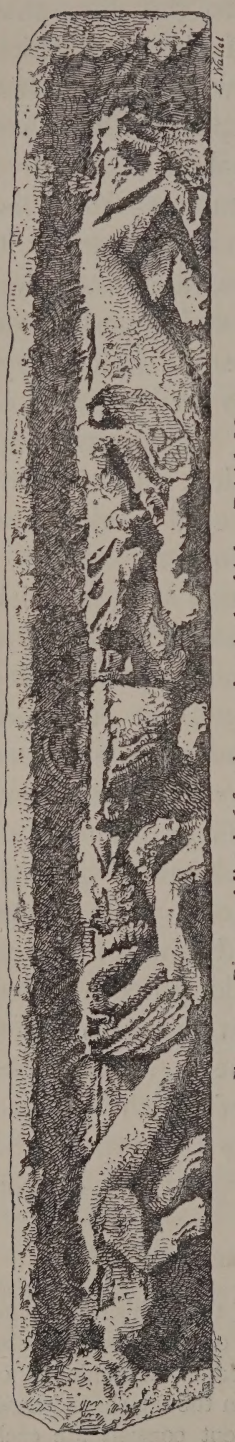


FIG. 95.—Decorated lintel, 6 feet long and 10 inches high. British Museum.

It is surprising that stone lintels are so rare, especially as the corresponding piece, if we may call it so, namely, the sill or threshold, was generally of limestone or alabaster, at least in the more important and more richly-decorated rooms.

The exploration of the Assyrian palaces has brought three systems of flooring to light—beaten earth, brick pavements, and pavements of limestone slabs.[1] In the palace of Sargon nearly every chamber, except those of the harem, had a floor of beaten earth, like that in a modern fellah's house. Even the halls in which the painted and sculptured decoration was most sumptuous were no exceptions to this rule. There is nothing in this, however, to surprise those who have lived in the East; like the Turks, Arabs, and Persians of our own time, the Chaldæans and Assyrians were shod, except when fighting or hunting, with those *babooshes* or sandals that are so often figured in the bas-reliefs. These must have been taken off, as they are to-day, before entering a temple, a palace, or a harem. Moses was required to take off his shoes before approaching the burning bush, because the place on which he stood was holy ground. In the houses of their gods, in those of their kings and rich men, the floor would be covered with those rich carpets and mats that from one end of the East to the other conceal from sight the floors of white wood or beaten earth. In summer the mats are fresh and grateful to the bare feet, in the winter the carpets are soft and warm. The floors themselves are hardly ever seen, so that we need feel no surprise at their being left without ornament. So, too, was it in all

[1] PLACE, *Ninive*, vol. i. pp. 295-302.

probability in the palaces of Sargon and of other kings, and in the sacred buildings.

Elsewhere, however, we find a pavement constructed with the most scrupulous care, and consisting of three distinct parts,—two layers of large bricks with a thick bed of sand interposed between them. The lower course of bricks is set in a bed of bitumen which separates it from the earth and prevents any dampness passing either up or down. This system of paving was used in most of the harem chambers at Khorsabad as well as in the open courts and upon the terraces. Lastly, in certain rooms of the seraglio and harem, in a few of the courts, in the vestibules, before the gates of the city, and in paths across wide open spaces, a limestone pavement has been found. Wherever this pavement exists, the stones are of the same kind and placed in the same manner. The limestone is exactly similar to that in the retaining walls described on page 147. The stones are often more than three feet square, and from two feet six inches to two feet ten inches thick. Their shape is not that of a regular solid; it is more like a reversed cone, the base forming the pavement and the narrow end being buried in the ground. These stones are simply placed side by side without the use of mortar or cement of any kind, but their weight and peculiar shape gave a singular durability to the pavement for which they were used.

Most of the sills belong to this class. And in Assyria where doorways were several yards deep and two or three wide, these sills were in reality the pavements of passages or even chambers.[1]

The materials for these pavements were always different from those of the floors on each side of them. In the entrances to the brick-paved courts large stones were used; in the passages between rooms floored with beaten earth bricks were introduced. The stone thresholds were mostly alabaster like the sculptured slabs upon the chamber walls. As a rule they were of a single piece, the great extent of surface, sometimes as much as ten or eleven square yards, notwithstanding. In the entries flanked by the winged bulls the sills were carved with inscriptions, which were comparatively rare elsewhere. Sometimes we find a rich and elaborate ornamentation in place of the wedges; it is made up of geometrical forms and conventional foliage and flowers; the figures of men and animals are never introduced. Such an

[1] PLACE, *Ninive*, vol. i. pp. 302, 303.

arrangement was in better taste than the mosaic thresholds of the Romans where men were shown in pictures destined to be trodden under foot. The Assyrian carver doubtless took his designs from the carpets in the adjoining chambers.

A good idea of these designs may be formed from the slab figured below. The centre is occupied by a number of interlacing circles, betraying no little skill on the part of the ornamentist. The "knop and flower" border of alternately closed and shut lotus flowers is separated from the centre by a band of rosettes. The whole is distinguished by thought and a severe taste. The

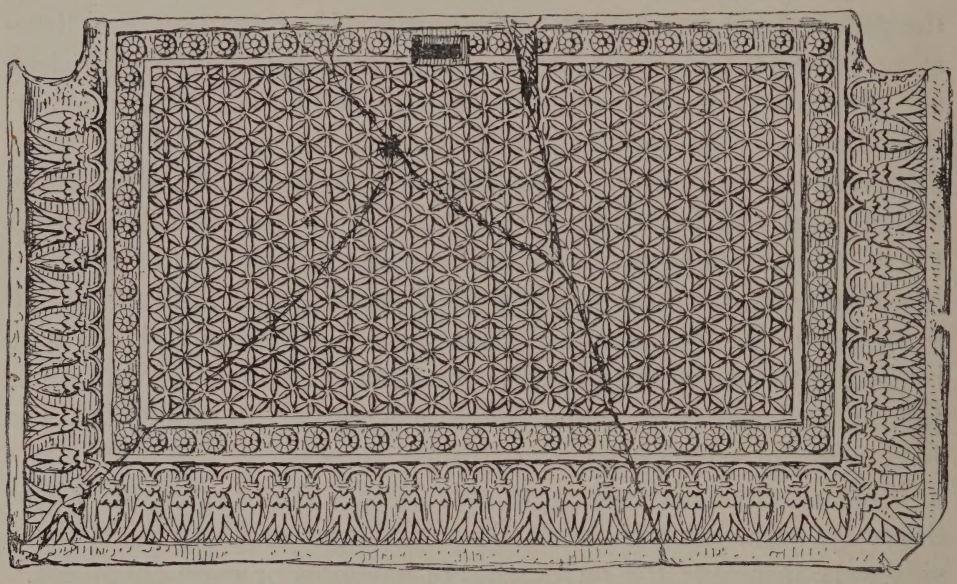


FIG. 96.—Sill of a door, from Khorsabad. Louvre. Length 40 inches. Drawn by Bourgoin.[1]

indented corners, where the pivots of the doors were placed, and the slot for the lower bolt of the door near the centre, should be noticed. These details prove that in this instance the door was a double one. In other cases the absence of the slot and the presence of only one pivot hole show that single doors were also used.[2] The doors always opened inwards, being folded back either against the sides of the entry itself or against the walls of the chamber.

Many of these sills or thresholds show no sign of a pivot at

[1] Two much better examples of this same work may be seen in the Assyrian basement-room of the British Museum.—ED.

[2] PLACE, *Ninive*, vol. i. p. 314.

either corner, whence we may conclude that many of the openings were left without doors, and could only have been closed by those suspended carpets or mats of which such ready use is made in hot countries.

In very magnificent buildings metal thresholds sometimes replaced those of stone or brick. In the British Museum there is a huge bronze sill that was found in a ruined temple at Borsippa, by Mr. Rassam. Its extreme length is sixty inches, its width twenty, and its thickness about three and a half inches. It bears an inscription of Nebuchadnezzar the arrangement of which proves that the sill when complete had double its present length, or about ten feet. Its upper surface is decorated with large rosettes within square borders. We need hardly say that it is a solid casting, and that its weight is, therefore, by no means trifling. The workmen who put in place and those who cast it must both have thoroughly understood what they were about. Even now, we are told, the latter operation would be attended by some difficulty.[1]

The founders who produced this casting could have no difficulty over the other parts of the door-case, and we have no reason to doubt the statement of Herodotus, who thus ends his account of how the walls of Babylon were built: "The walls had a hundred gates, all of bronze; their jambs and lintels were of the same material."[2]

These lintels and jambs must have been, like the Borsippa threshold, of massive bronze, or they would soon have been crushed by the weight they had to support. On the other hand, had doors themselves been entirely of that metal it would have been very difficult if not impossible to swing them upon their hinges, especially in the case of city gates like those just referred to. It is probable, then, that they were of timber, covered and concealed by plates of bronze. Herodotus indeed narrates what he saw, like a truthful and intelligent witness, but he was not an archæologist, and it did not occur to him when he entered the famous city which formed the goal of his travels, to feel the shining

[1] We here quote the opinion of Mr. Ready, the well-known director of the museum workshops. In April, 1882, he had examined this curious monument, which is now placed in the public galleries close to the Balawat gates.

[2] HERODOTUS, ii. 179: Πύλαι δὲ ἐνεστᾶσι πέριξ τοῦ τείχεος ἑκατὸν, χάλκεαι πᾶσα καὶ στάθμοί τε καὶ ὑπέρθυρα ὡσαύτως.

metal and find out how much of it was solid and how much a mere armour for a softer substance behind.

From fragments found at Khorsabad, M. Place had already divined that the Assyrians covered the planks of their doors with bronze plates, but all doubts on the point have been removed by a recent discovery, which has proved once for all that art profited in the end by what at first was nothing more than a protection against weather and other causes of deterioration. In 1878 Mr. Hormuzd Rassam, the fellow traveller of Sir Henry Layard, found in the course of his excavations in Assyria for the British Museum, some metallic bands covered with *repoussé* reliefs and bearing the name of Shalmaneser III. (895—825). The site of this discovery was Balawat, an artificial mound about fifteen miles to the east of Mossoul.[1] As soon as these bands had been examined in London by competent archæologists, they were recognized as having belonged to the leaves of a wooden door, which must have been nearly twenty-seven feet high and about three inches thick. This latter dimension has been deduced from the length of the nails used to keep the bands in place. At one end these bands were bent with the hammer round the pivot to which each half of the door was attached. These pivots, judging from the bronze feet into which they were "stepped," were about twelve inches in diameter.

It is easy to see from their shape how these feet were fixed and how they did their work (Fig. 97). The point of the cone was let into a hollow socket prepared for it in a block cut from the hardest stone that could be found. Such a material would resist friction better and take a higher polish than brick, so that it was

[1] An account of the discovery and a short description of the remains, will be found in an article by Mr. Theo. G. Pinches, published in the *Transactions of the Society of Biblical Archæology*, and entitled: *The Bronze Gates discovered by Mr. Rassam at Balawat* (vol. vii. part i. pp. 83-118). The sculptured bronze from these gates is not all, however, in the British Museum. Mr. Rassam's workmen succeeded in appropriating a certain number in the course of the excavations, and thus M. Gustave Schlumberger has become possessed of a few pieces, while others of much greater importance have come into the hands of M. de Clercq. M. F. Lenormant has published in the *Gazette Archéologique* (1878) a description of the pieces belonging to M. Schlumberger, with two plates in heliogravure. We have already referred to the great work which is now in course of publication by the *Society of Biblical Archæology*; it will put an exact reproduction of this interesting monument in the hands of Assyriologists and those interested in the history of art. We shall return to these gates when we come to treat of sculpture.

at once more durable and less holding. Sockets of flint, basalt, trachyte, and other volcanic rocks have been found in great numbers both in Assyria and Chaldæa.[1] Instances of the use of brick in this situation are not wanting,[2] however, and now and then the greenish marks left by the prolonged contact of metal have been discovered in the hollows of these sockets.[3]

More than one method was in use for fixing the pivots of the doors and enabling them to turn easily. Sir Henry Layard

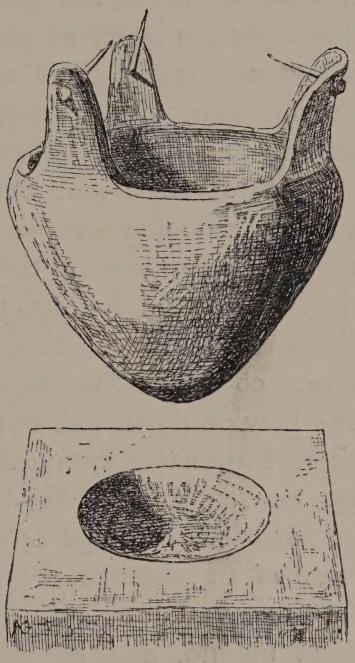


FIG. 97.—Bronze foot from the Balawat gates and its socket.[4] British Museum.

brought from Nimroud four heavy bronze rings which must have been used to supplement these hollow sockets.[5] In one

[1] A number of sockets found by M. de Sarzec in the ruins of Tello are now deposited in the Louvre. M. PLACE found some at Khorsabad (*Ninive*, vol. i. p. 314), and Sir Henry LAYARD on the sites of the towns in Upper Mesopotamia (*Discoveries*, p. 242). The British Museum has a considerable number found in various places.

[2] In the same case as the Balawat gates there is a brick, which has obviously been used for this purpose.

[3] PLACE, *Ninive*, vol. i. p. 314.

[4] In the British Museum there are some smaller bronze objects of the same kind from the palace of Sennacherib. Others were found by M. PLACE in the palace of Sargon (*Ninive*, plate 70, fig. 6), so that they must have been in frequent use.

[5] LAYARD (*Discoveries*, p. 163) gives a sketch of one of these objects. Its internal diameter is about five inches, and its weight 6 lbs. $3\frac{3}{4}$ oz. These rings are now in the British Museum.

way or another bronze occupied a very important place in the door architecture of the Assyrians. In those cases where it neither supplied the door-case nor ornamented its leaves, it was at least used to fix the latter and to enable them to turn.

In Assyrian façades doors had much greater importance than in those architectural styles in which walls are broken up by numerous openings. Their great size, their rich and varied ornamentation, the important figures in high relief with which the walls about them were adorned, the solemn tints of bronze lighted up here and there by the glory of gold, the lively colours of the enamelled bricks that formed their archivolts, and finally the contrast between the bare and gleaming walls on either side and their depths of shadow—all these combined to give accent to the doorways and to afford that relief to the monotony of the walls of which they stood in so great a need. For Assyrian mouldings are even poorer than those of Egypt. The softness of crude brick, the brittle hardness of burnt brick, are neither of them well disposed towards those delicate curves by which a skilful architect contrives to break the sameness of a façade, and to give the play of light and shadow which make up the beauty of a Greek or Florentine cornice.

The only mouldings encountered in Assyria have been found on a few buildings or parts of buildings in which stone was employed. We may quote as an instance the retaining wall of the small, isolated structure excavated by Botta towards the western angle of the Khorsabad mound, and by him believed to be a temple.[1] The wall in question is built of a hardish grey limestone, the blocks being laid alternately as stretchers and headers. The wall is complete with plinth, die and cornice (Figs. 98 and 99). The latter is a true cornice, composed of a small torus or bead, a scotia, and a fillet. The elements are the same as those of the Egyptian cornice, except in the profile of the hollow member, which is here a *scotia* and in Egypt a *cavetto*, to speak the language of modern architects. The Egyptian moulding is at once bolder and more simple, while the vertical grooves cut upon its surface give it a rich and furnished aspect that its Assyrian rival is without.[2]

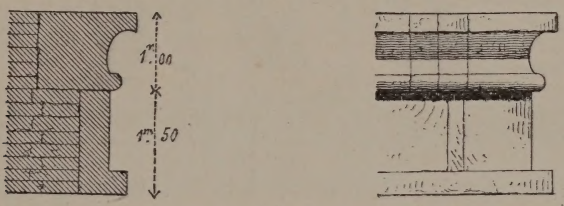
[1] Botta, *Monument de Ninive*, vol. v. pp. 53-55.

[2] Botta, *Monument de Ninive*, plates 149 and 150. See also Layard, *Discoveries*, p. 131, and Fergusson, *History of Architecture*, vol. i. p. 185 (2nd edition).

We have another example of Assyrian mouldings on the winged sphinx found by Layard at Nimroud (Fig. 85)—the sphinx, that is, that bore a column on its back. In section this moulding may be compared to a large *scotia* divided into two *cavettos* by a *torus*. Its effect is not happy. The Assyrians had too little experience in stone-cutting to enable them to choose the most satisfactory proportions and profiles for mouldings.

We may also point to the entablatures upon the small pavilions reproduced in our Figs. 41 and 42. They are greatly wanting in elegance; in one especially—that shown in Fig. 42—the superstructure is very heavy in proportion to the little temple itself and its columns.

The only moulding, if we may call it so, borrowed by Assyria from Chaldæa, and employed commonly in both countries, is a brick one. Loftus was the first to point it out. He discovered



FIGS. 98, 99.—Assyrian mouldings. Section and elevation; from Botta.

it in the ruined building, doubtless an ancient temple, in the neighbourhood of Warka, and called by the natives *Wuswas*. This is his description:—"Upon the lower portion of the building are groups of seven half-columns repeated seven times—the rudest perhaps which were ever reared, but built of moulded semicircular bricks, and securely bonded to the wall. The entire absence of cornice, capital, base or diminution of shafts, so characteristic of other columnar architecture, and the peculiar and original disposition of each group in rows like palm logs, suggest the type from which they sprang." [1]

With his usual penetration, Loftus divines and explains the origin of these forms. The idea must have been suggested, he thinks, by the palm trunks that were used set closely together in timber constructions, or at regular intervals in mud walls. In either case half of their thickness would be visible externally,

[1] LOFTUS, *Travels and Researches*, p. 175.

and would naturally provoke imitation from architects in search of ornament for the bald faces of their clay structures.[1]

As to the effect thus obtained, the rough sketch given by Loftus hardly enables us to decide (see Fig. 100). From Assyria, however, come better materials for a judgment. We there often find these perpendicular ribs, generally in groups of seven, in buildings that have been carefully studied and illustrated upon a sufficient scale. We give an example from one of the harem gates at Khorsabad (Fig. 101), by which we may see at once that an ornamental motive of no little value was afforded by these huge vertical reeds with their play of alternate light and shadow, and the happy contrast they set up between themselves and the brilliant hues of the painted walls and enamelled bricks. The whole had a certain elegant richness that can hardly be appreciated

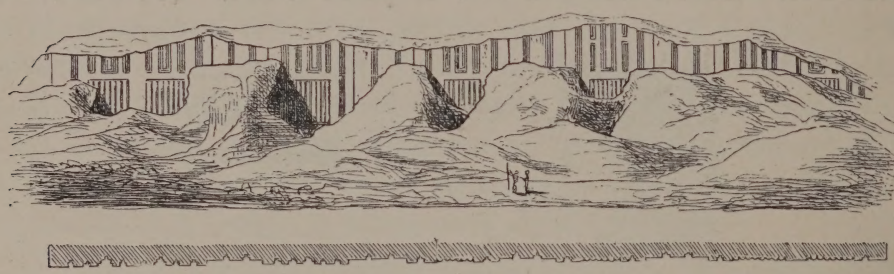


Fig. 100.—Façade of a ruined building at Warka; from Loftus.

without the restoration, in every line and hue, of the original composition.

Both at Warka and in the Khorsabad harem, these vertical ribs are accompanied by another ornament which may, perhaps, have been in even more frequent use. We mean those long perpendicular grooves, rectangular in section, with which Assyrian and Chaldæan walls were seamed. In the harem wall these grooves flank the group of vertical reeds right and left, dividing each of the angle piers into two quasi-pilasters. At Warka they appear in the higher part of the façade, above the groups of semi-columns. They serve to mark out a series of panels, of which only the

[1] M. Place offers a similar explanation of the engaged columns that were found in many parts of the palace at Khorsabad (*Ninive*, vol. ii. p. 50). He has brought together in a single plate all the examples of pilasters and half columns that he encountered in that edifice. Similar attempts to imitate the characteristic features of a log house are found in many of the most ancient Egyptian tombs. See *Art in Ancient Egypt*, vol. ii. p. 62 and fig. 37.

lower parts have been preserved. The missing parts of the decoration may easily be supplied by a little study of the Assyrian remains. The four sides of the building at Khorsabad, called by M. Place the *Observatory*, are decorated uniformly in this fashion. The general effect may be gathered from our restoration of one angle. The architect was not content with decorating his wall with these grooves alone; he divided it into alternate compartments, the one salient, the next set back, and upon these

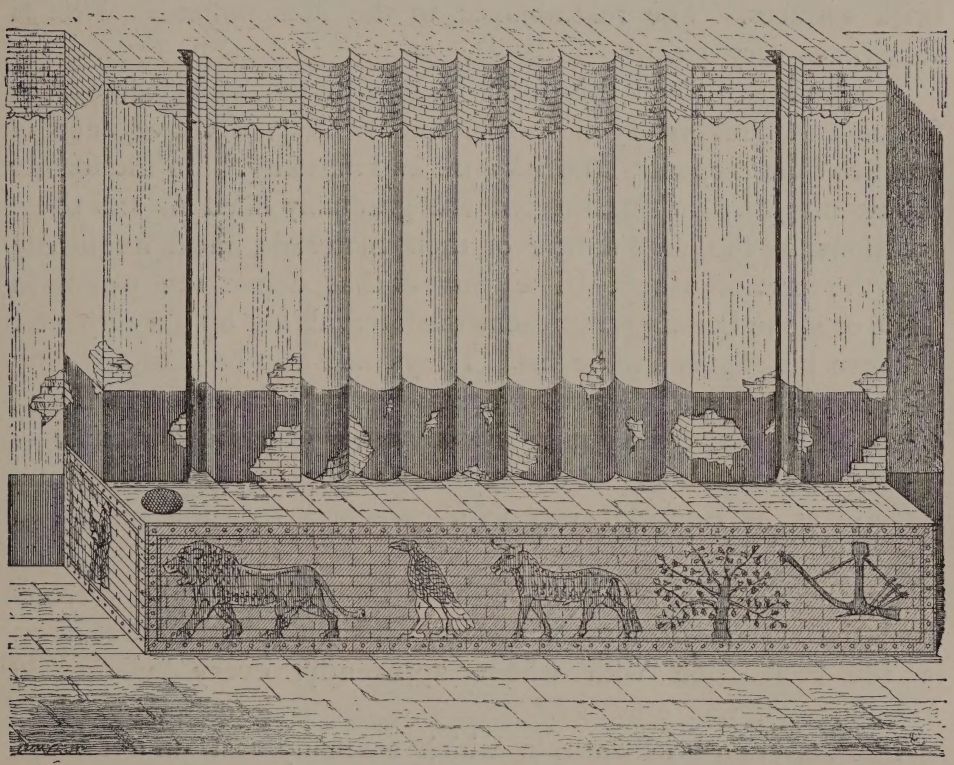


FIG. 101.—Decoration of one of the harem gates, at Khorsabad; compiled from Place.

compartments he ploughed the long lines of his decoration. These changes of surface helped greatly to produce the varied play of light and shadow upon which the architect depended for relief to the bare masses of his walls. The most ordinary workmen could be trusted to carry out a decoration that consisted merely in repeating, at certain measured intervals, as simple a form as can be imagined, and, in the language of art as in that of rhetoric, there is no figure more effective in its proper place than repetition.

The necessity for something to break the monotony of the brick

architecture was generally and permanently felt, and in those Parthian and Sassanide periods in which, as we have said, the traditions of the old Chaldæan school were continued, we find the panel replaced by wall arcades in which the arches are divided from each other by tall pilasters. In general principle and intention the two methods of decoration are identical.

The Egyptian architect had recourse to the same motive, first, in the tombs of the Ancient Empire for the decoration of the chamber walls in the mastabas; secondly, for the relief of great brick surfaces. The resemblance to the Mesopotamian work is sometimes very great.[1]

We have explained this form by one of the transpositions so frequent in the history of architecture, namely, a conveyance of motives from carpentry to brickwork and masonry.[2] In the former the openings left in the skeleton are gradually filled in, and these additions, by the very nature of their materials, most frequently take the form of panels. The grooves that define the panels in brick or stone buildings represent the intervals left by the carpenter between his planks and beams. They could also be obtained very easily upon the smooth face of beams brought into close contact, either by means of the gouge or some other instrument capable of cutting into the wood. We may safely assert that in Chaldæa and Assyria, as in Egypt, it was with carpentry that the motive in question originated.

On the other hand, if there be a form that results directly from the system of construction on which it is used, that form is the crenelation with which, apparently, every building in Mesopotamia was crowned.[3]

The Assyrian brickwork in which so many vast undertakings were carried out consists of units all of one dimension, and bonded by the simple alternation of their joints. Supposing a lower course to consist of two entire bricks, the one above it would be one whole brick flanked on either side by a half brick. An Assyrian wall or building consists of the infinite repetition of this single figure. Each whole brick lies upon the joint between

[1] See, for instance, in *Art in Ancient Egypt*, vol. i. figs. 123, 124, 201, and in vol. ii. pp. 55-64, and figs. 35-37 and 139.

[2] *Art in Ancient Egypt*, vol. i. p. 117.

[3] We here give a *résumé* of M. Place's observations on this point. He made a careful study of these crenelations. *Ninive*, vol. ii. pp. 53-57.

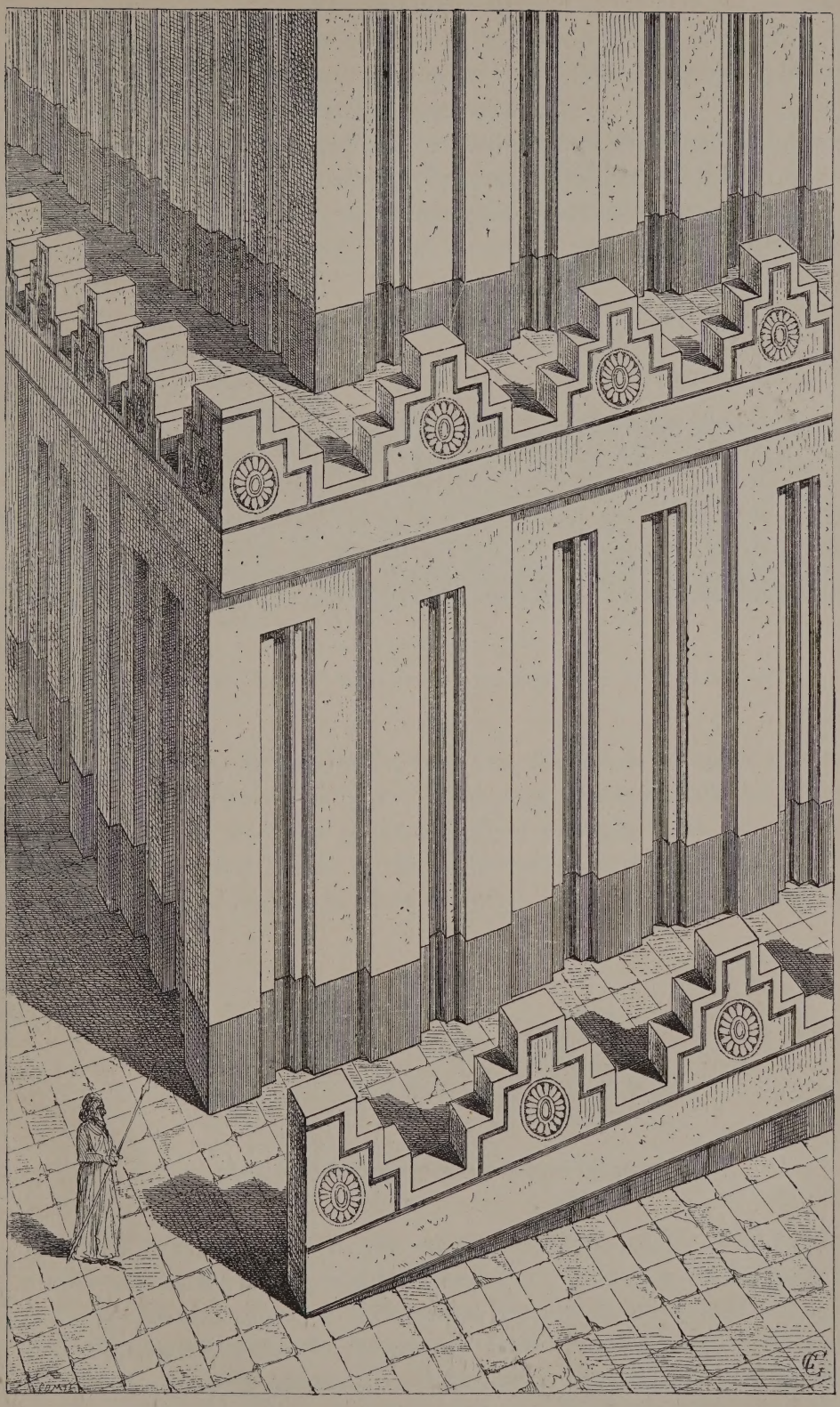


FIG. 102.—View of an angle of the *observatory* at Khorsabad ; compiled from Place.

two others, and every perpendicular wall, including parapet or battlement, is raised upon this system.

Far from being modified by the crenelations, this bond regulates their form, dimensions, and distribution. The crenelations of the palace walls consist of two rectangular masses, of unequal size, placed one upon the other. The lower is two bricks'-length, or

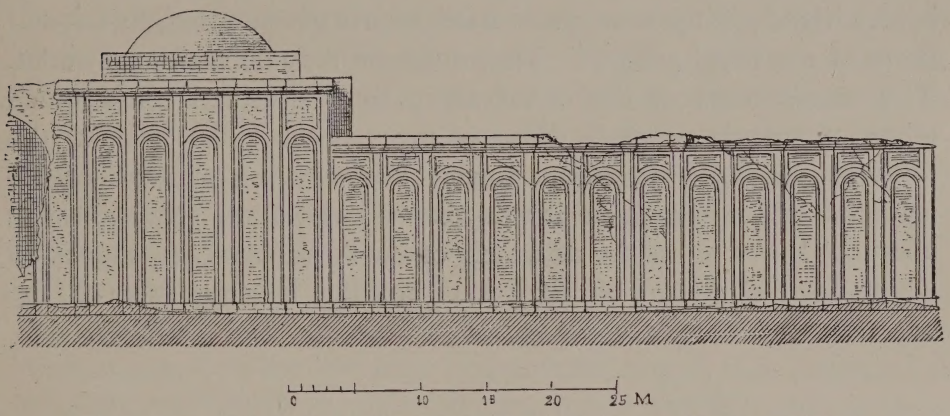


FIG. 103.—Lateral façade of the palace at Firouz-Abad; from Flandin and Coste.

about thirty-two inches, wide, and the thickness of three bricks, or about fourteen inches, high. The upper mass equals the lower in height, while its width is the length of a single brick, or sixteen inches. The total height of the battlement, between twenty-eight and twenty-nine inches, is thus divided into two masses, one of

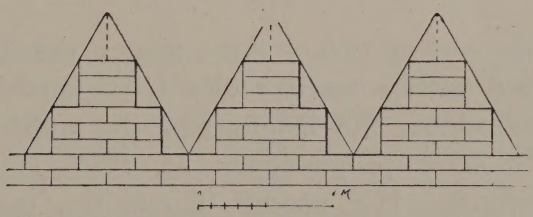


FIG. 104.—Battlements from an Assyrian palace.

which is twice the size of the other (see Fig. 104). The battlements are all the same, and between each pair is a void which is nothing but the space a battlement upside down would occupy. Fill this space with the necessary bricks, and a section of wall would be restored identical in bond with that below the battlements, with the one exception that the highest block of the

battlement, being only one brick wide, is formed by laying three whole bricks one upon the other.[1]

The crenelations we have been describing are those upon the retaining walls of Sargon's palace at Khorsabad. Those of the *Observatory* are slightly different in that they are three stories high instead of two (Fig. 105). The lowest is three bricks wide, the second three, the topmost two. They are each three bricks high. Why were these battlements given a height beyond those of the royal palace? That question may be easily answered. The crenelations of the observatory were destined for a much more lofty situation than those of the palace. The base of the former monument rose about 144 feet above the summit of the artificial hill upon which it was placed; the total elevation was about 190 feet, a height at which ordinary battlements, especially when for the most part they had nothing but the face of the

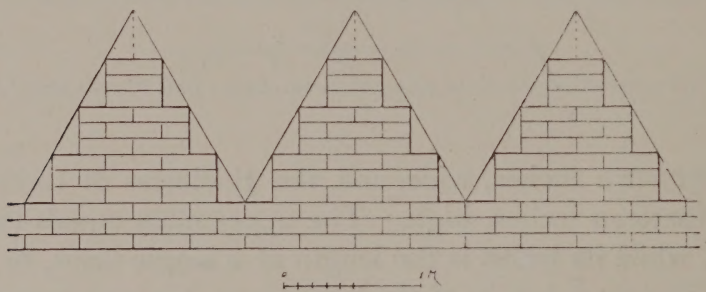


Fig. 105.—Battlements from the Khorsabad *Observatory*.

higher stories to be relieved against, would be practically invisible.

Whether composed of two or three stages this battlement was always inscribed within an isosceles triangle; in fact, when a third story was added, the height and the width at the base increased in the same proportions. M. Place lays great stress upon this triangle. He makes it cut the upper angles of each of the superimposed rectangles, as we have done in our Figs. 104 and 105, and he points out how such a process gives an outline similar to that of a palisade cut into points at its summit, a precaution that is often taken to render the escalade of such an obstacle more difficult, and M. Place is inclined to think that the idea of these crenelations was suggested by those of a wooden palisade, a succession of rectangles being substituted for

[1] See M. Place's diagrams, *Ninive*, vol. ii. p. 54.

a triangle in order to meet the special conditions of the new material. To us, however, it hardly appears necessary to go back to the details of wooden construction to account for these forms. We find no sign of M. Place's spiked palisades in the bas-reliefs. The inclosures of the Mesopotamian fields must have consisted of palm trunks and strong reeds; planks were hardly to be cut from the trees of the country. Moreover, the mason and bricklayer saw the forms of these battlements repeated by their hand every instant. Whenever they began a fresh course the first brick they placed upon the joint between two units of the course below was the first step towards a battlement. The decoration obtained by the use of these battlements was not a survival from a previous form, it was a natural consequence from the fundamental principle of Assyrian construction.

It has been thought that some of the buildings represented on the bas-reliefs have triangular denticulation in place of the battlements figured on the last page;[1] and there are, in fact, instances in the reliefs of walls denticulated like a palisade (see Fig. 38), but these must not, we think, be taken literally. In most cases the chisel has been at the trouble to show the real shapes of the battlements (Fig. 42), but in some instances, as in this, it has been content to suggest them by a series of zig-zags. Here and there we may point out a picture in stone which forms a transition between the two shapes, in Fig. 41 for example. Such an abbreviation explains itself. It is, in fact, nothing more than an imitation of the real appearance of the rectangular battlements when seen from a distance.[2]

[1] PLACE, *Ninive*, vol. ii. p. 53.

[2] M. Perrot dismisses the evidence of those who believe in a palisade origin of the Assyrian battlements in what is, perhaps, rather too summary a fashion. The fact is that the great majority of the crenelated buildings in the reliefs have triangular battlements, while the theory that they are merely a hasty way of representing the stepped crenelations is to some extent discredited by their frequent occurrence side by side with the latter on the same relief. The Balawat gates, for instance, contain some nine or ten examples of the triangular, and four or five of the stepped, shape. In the series of sculptured slabs representing the siege of a city by Assurnazirpal (10 to 15 in the Kouyundjik gallery at the British Museum), there are examples of both forms, and in more than one instance the triangular battlements are decorated with lines and rosettes—similar in principle to those shown above in fig. 106—that can hardly be reconciled with the notion that their form is the result of haste on the part of the artist. In the Assyrian Basement Room in the British Museum there is an interesting bas-relief representing Assyrian soldiers busy with the demolition of a fortified wall, probably of some city just taken. The air is thick with

The architect was not content with the mere play of light and shade afforded by these battlements. He gave them a slight salience over the façade and a polychromatic decoration. About three feet below the base of the crenelations the face of the wall was brought forward an inch or two, so that the battlements themselves, and some eight or ten courses of bricks below them, overhung the façade by that distance, forming a kind of rudimentary cornice (see Fig. 106). In very elaborate buildings enamelled bricks were inserted between the battlements and this cornice. These were decorated with white rosettes of different sizes upon a blue ground. The explorers of Khorsabad encountered numberless fragments of these bricks and some whole ones in the heaps of rubbish at the foot of the external walls. Their situation proved that they had come from the top of the walls, and on the whole we may accept the restoration of M. Thomas, which we borrow from the work of M. Place, as sufficiently justified (Fig. 106).[1]

This method of crowning a wall may seem poor when compared to the Greek cornice, or even to that of Egypt, but in view of the materials with which he had to work, it does honour to the architect. The long band of shadow near the summit of the façade, the bands of brilliantly coloured ornament above it, and the rich play of light and shade among the battlements, the whole relieved against the brilliant blue of an Eastern sky, must have had a fine effect. The uniformity from which it suffered was a defect common to Mesopotamian architecture as a whole, and one inseparable from the absence or comparative disuse of stone. But in the details we have been studying we find yet another illustration of the skill with which these people corrected, if we may so phrase it, the vices of matter, and by a frank use of their materials and insistance upon those horizontal and perpendicular lines which they were best fitted to give, evolved from it an architecture that proved them to have possessed a real genius for art.

the materials thrown down from its summit, among them a great number of planks or beams, which seem to suggest that timber was freely employed in the upper works of an Assyrian wall. If this was so, the pointed battlements in the reliefs may very well represent those in which timber was used, and the stepped ones their brick imitations. Both forms were used as decorations in places where no real battlements could have existed, as, for instance, on the tent of Sennacherib, in the well-known bas-relief of the siege of Lachish (see fig. 56).—Ed.

[1] Place, *Ninive*, vol. ii. p. 85.

The Assyrians seem to have been so pleased with these crenelations that they placed them upon such small things as steles and altars. In one of the Kouyundjik reliefs (Fig. 42) there is a small

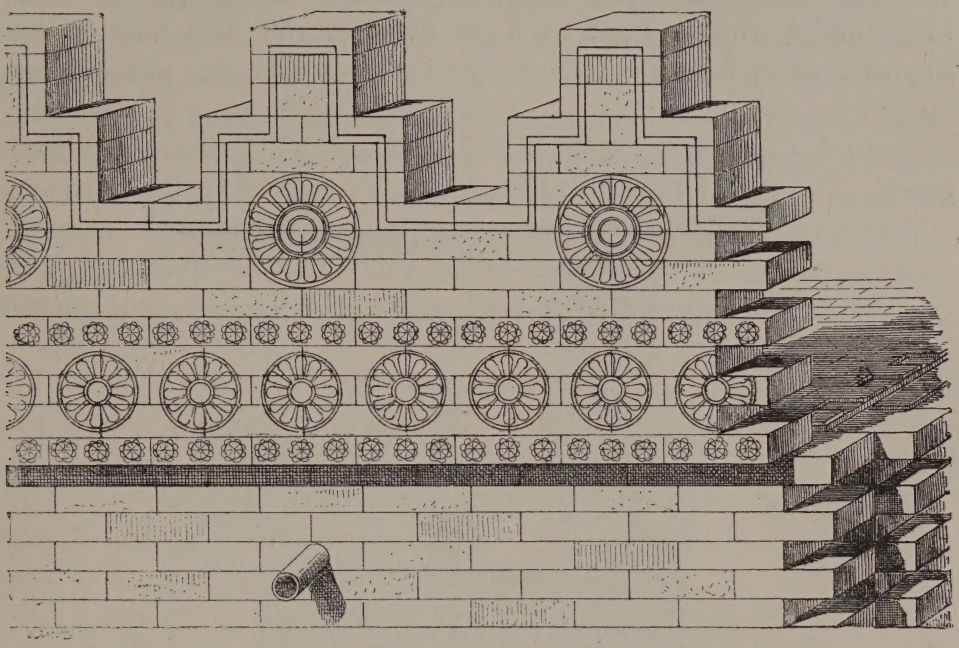


FIG. 106.—Battlements of Sargon's palace at Khorsabad; compiled from Place.

object—a pavilion or altar, its exact character is not very clearly shown—which is thus crowned. Another example is to be found in a bas-relief from Khorsabad (Fig. 107).

We are thus brought to the subject of altars. These are sufficiently varied in form. In the Kouyundjik bas-relief (Fig. 42) we find those shapes at the four angles which were copied by the peoples of the Mediterranean, and led to the expression, "the horns of the altar." In the Khorsabad relief (Fig. 107) the salience of these horns is less marked. On the other hand, the die or dado below them is fluted. Another altar brought from Khorsabad to the Louvre is quite different in shape (Fig. 108). It is triangular on plan. Above a plinth with a gentle salience rises the altar itself, supported at each angle by the paw

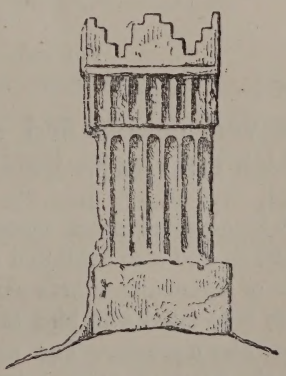


FIG. 107.—Altar; from Rawlinson.

of a lion. The table is circular, and decorated round the edge with cuneiform characters.

A third type is to be found in an altar from Nimroud, now in the British Museum (Fig. 109); it dates from the reign of Rammanu-nirari, who appears to have lived in the first half of the eighth century before our era.[1] The rolls at each end of this altar

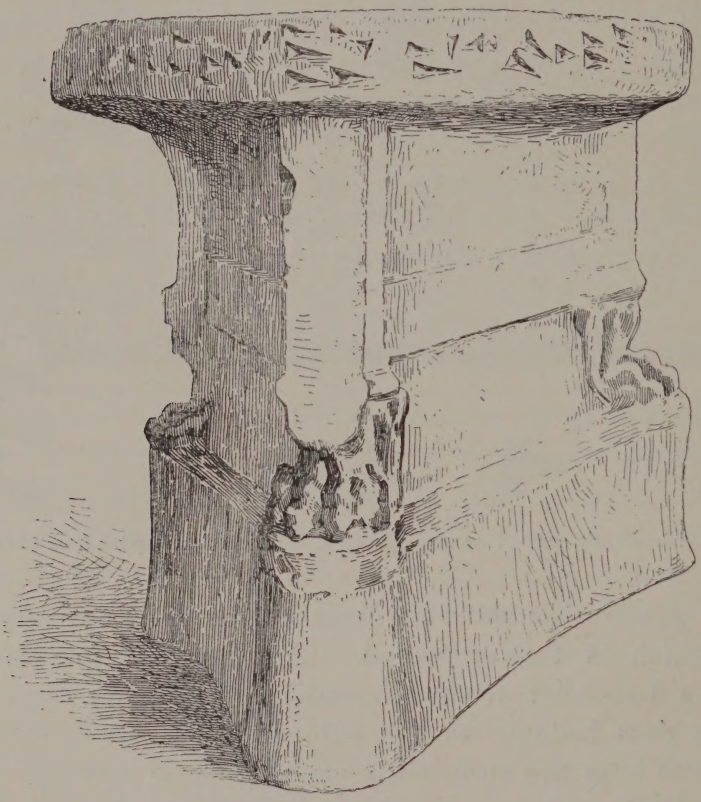


Fig. 108.—Altar in the Louvre. Height 32 inches.[2]

are very curious and seem to be the prototype of a form with which the Græco-Roman sarcophagi have made us familiar.

[1] Upon some other monuments brought from the same place by Mr. Hormuzd Rassam, and also exhibited in the Nimroud central saloon, we may read by the side of Rammanu-nirari's name that of his spouse Sammuramat, who seems to have been associated with him in the government, and to have been the recipient of particular honours. The name of this princess has caused some to recognize in her the fabulous Semiramis of the Greek writers. In consequence of facts that have escaped us she may well have furnished the first idea for the romantic legends whose echo has come down to our times.

[2] There is an altar almost exactly similar to this in the British Museum. It was found in front of the temple of the War God, Nimroud.—Ed.

The various kinds of steles are also very interesting. The most remarkable of all is one discovered at Khorsabad by M. Place (Fig. 100). The shaft is composed of a series of perpendicular bands alternately flat and concave, exactly similar to the flutes of the Ionic order. The summit is crowned by a plume of palm leaves rising from a double scroll, like two consoles placed horizontally and head to head. The grace and slenderness of this stele are in strong contrast to the usually short and heavy forms affected by the Assyrian architects, especially when they worked in stone. It is difficult to say what its destination may have been. It was discovered lying in the centre of an outer court surrounded by offices and other subordinate buildings; it has neither figure

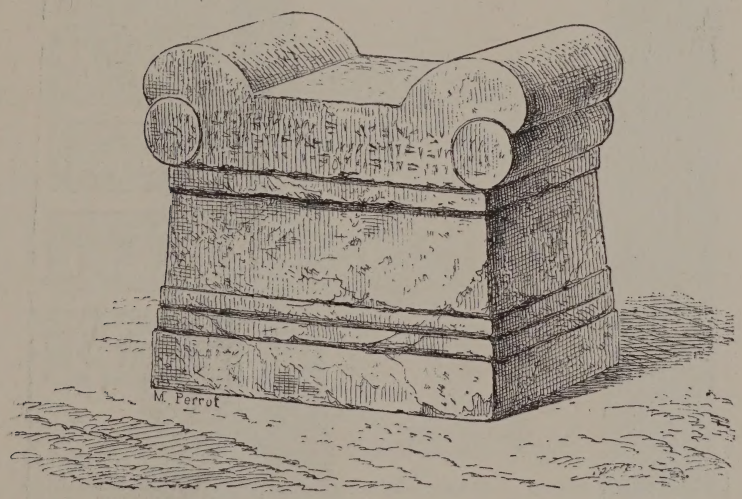


FIG. 109.—Altar in the British Museum. Height 22 inches, length at base 22 inches.

nor inscription.[1] The base was quite rough and shapeless, and must have been sunk into the soil of the court, so that the flutes began at the level of the pavement. M. Place suggests that it may have been a *milliarium*, from which all the roads of the empire were measured. We do not know that there is a single fact to support such an unnecessary guess.

The stele of which we have been speaking is unique, but of another peculiarly Assyrian type there is no lack of examples, namely, of that to which the name *obelisk* has, with some want of discrimination, been applied. The Assyrian monoliths so styled are much shorter in their proportions than the lofty "needles" of

[1] PLACE, *Ninive*, vol. i. p. 96; vol. ii. pp. 71-73.

Egypt, while their summits, instead of ending in a sharp pyramidion, are "stepped" and crowned with a narrow plateau. (Fig. 111.) These monoliths were never very imposing in size, the tallest is hardly more than ten feet high.

Whatever name we choose to give to these objects, there can be no doubt as to their purpose. They are commemorative monuments, upon which both writer and sculptor have been

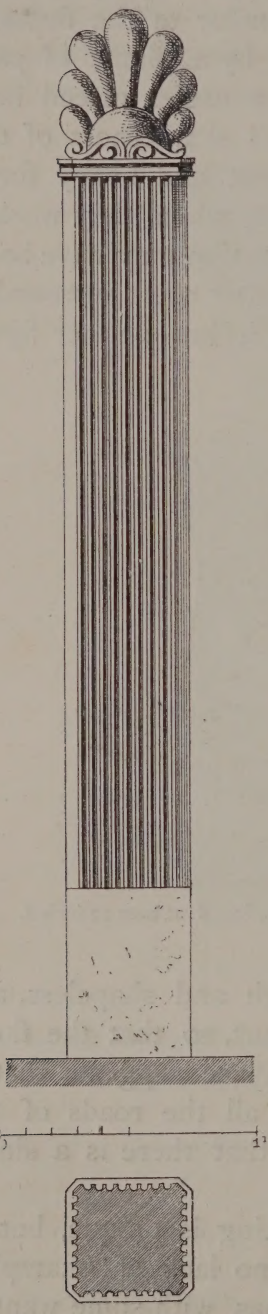


Fig. 110.—Stele from Khorsabad. Plan and elevation; from Place.

Fig. 111.—The obelisk of Shalmaneser II. in the British Museum.[1] Height 78 inches. Drawn by Bourgoin.

[1] Besides the obelisk of Shalmaneser II., which is in a marvellous state of preservation, the British Museum possesses three other objects of the same kind. Two of these were made for Assurnazirpal; the third, the most ancient of all, dates from the time of Tiglath Pileser I.; unhappily only fragments of it remain.

employed to celebrate the glory of the sovereign. A long inscription covers the base of the shaft, while the upper part of each face is divided into five pictures, the narrow bands between them bearing short legends descriptive of the scenes represented. It was, of course, important that such figured panegyrics should be afforded the best possible chance of immortality; and we find that most of these obelisks are composed of the hardest rocks. Of the four examples in the British Museum, three are of basalt and one only of limestone.

Another type of stele in frequent employment was that with an arched top and inclosing an image of the king. It is often represented on the bas-reliefs[1] (Fig. 42), and not a few examples of it are in our museums. When we come to speak of Assyrian

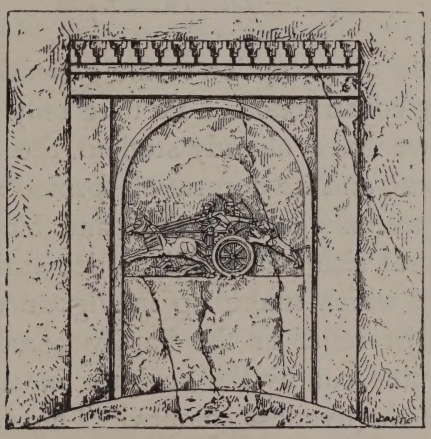


FIG. 112.—Rock-cut Stele from Kouyundjik. British Museum.

sculpture we shall have to reproduce some of them. We find a motive of the same kind, but more ornate and complicated, in the bas-relief from Kouyundjik figured above (Fig. 112). A hunting scene is carved on a wall of rock at the top of a hill. A lion attacks the king's chariot from behind; the king is about to pierce his head with an arrow while the charioteer leans over the horses and seems to moderate the determination with which they fly.[2] The sculpture is surrounded by a frame arched at the top and inclosed by an architrave with battlemented cornice. The whole forms a happily conceived little monument; it is probable that it was originally accompanied by an explanatory inscription.

[1] See also BOTTA, *Monument de Ninive*, vol. i. plate 64. We here find an instance of one of these arched steles erected before a fortress.

[2] ?—ED.

This analysis of what we have called secondary forms has shown how great was the loss of the Chaldæan architect and of his too docile Assyrian pupil, in being deprived—by circumstances on the one hand and want of inclination on the other—of such a material as stone. Without it they could make use of none of those variations of plan and other contrivances of the same kind by which the skilful architect suggests the internal arrangement of his structures on their façades. For such purposes he had to turn to those constituents of his art to which we shall devote our next section.

§ 7.—*Decoration.*

Mesopotamia was no exception to the general rule that decoration is governed by construction. To take only one example, and that from an art we have already studied, the Egyptian temple was entirely of stone, and its decoration formed a part of the very substance of what we may call the flesh and blood of the edifice. The elements of that rich and brilliant decoration are furnished by those mouldings which make up in vigour what they lack in variety, by the slight relief or the hardly perceptible intaglio of the shadowless figures cut by the sculptor in stone, and covered by the painter with the liveliest colours. This sumptuous decoration, covering every external and internal surface, may no more be detached from it than the skin of an animal may be detached from its muscles. The union is even more intimate in this case, the adherence more complete. So long as the Egyptian walls remain standing, the blocks of limestone, sandstone, or granite of which they are composed, can never be entirely freed from the images, that is, from the expression of the thoughts, cut upon them by the men of forty centuries ago.

In Assyria the case was different. There buildings were of brick, each unit being in the vast majority of cases a repetition of its neighbour. In very few instances were the bricks of special shapes, and the buildings in which they were used could only be decorated by attached ornament, similar in principle to the mats and hangings we spread over the floors and walls that we wish to hide. This result they obtained in one of two ways; they either

cased their walls in stone, an expensive and laborious process, or they covered them with a decoration of many colours.

As soon as stone came into use, it must have offered an irresistible temptation to the chisel of the sculptor and the ornamentist; and so we nearly always find it decorated with carvings. Sometimes, as in the lintel and thresholds described above (Figs. 95 and 96), the motives are purely ornamental. Elsewhere, in the gates of the Assyrian palaces, and in the plinths of the walls that surround their courts and halls, we find both figures in the round and in low relief. In a future chapter we shall attempt to define the style of these works and to determine their merit. For the present we must be content with pointing out the part played by sculpture in the general system of decoration.

In Chaldæa sculpture must have played a very feeble part in the *ensemble* of a building, stone was too costly in consequence of the distance it had to be carried. From the ruins of Chaldæa no colossi, like those which flanked the entrances of the Ninevite palaces, none of those long inscriptions upon alabaster slabs which have been of such value for the student of Assyrian history, have been brought. This latter material and all the facilities it offered to the sculptor was apparently entirely neglected by the Chaldæans. In Lower Mesopotamia the hard volcanic rocks were chiefly used. They were preferred, no doubt, for their durability, but they were little fitted for the execution of figures of any size, and especially was it impossible to think of using them for such historic bas-reliefs as those upon which the Assyrians marshalled hundreds, or rather thousands, of busy figures. Chaldæan doorways may, however, have been sometimes flanked with lions and bulls,[1] we are indeed tempted to assign to such a position one monument which has been described by travellers, namely, the lion both Rich and Layard saw half buried in the huge ruin at Babylon called the *Kasr*.[2] It is larger than life. It stands upon a plinth, with its paws upon the figure of a struggling man. There is a circular hole in its jaw bigger than a man's fist. The workmanship is rough; so too, perhaps, is that of the basalt lion seen by

[1] The cuneiform texts mention the "two bulls at the door of the temple E-schakil," the famous staged tower of Babylon. Fr. LENORMANT, *Les Origines de l'Histoire*, vol. i. p. 114 (2nd edition, 1880).

[2] RICH, *Narrative of a Journey to the Site of Babylon in* 1811, *and a Memoir on the Ruins*, p. 64. LAYARD, *Discoveries*, p. 507. According to Rich, this lion was of grey granite; according to Layard, of black basalt.

Loftus at Abou-Shareyn. This latter is about fifty-four inches high and its original place may very well have been before one of the doorways of the building.[1]

Of all animal forms, that of the lion was the first to afford materials for decorative composition of any value, and even after all the centuries that have passed, the lion has not lost his vogue in the East. We might, if we chose, multiply examples of this persistence, but we shall be content with quoting one. In the centre of Asia Minor, at the village of Angora, in which I passed three months of the year 1861, I encountered these lions at every turn. A short distance off, in the village of Kalaba, there was a fountain of Turkish construction in which a lion, quite similar in style to those of Assyria, had been inserted.[2] In the court of a mosque there was a lion in the round, a remarkable work by some Græco-Roman sculptor.[3] There and in other towns of Asia Minor, lions from the Seljukian period are by no means rare, and even now they are made in considerable numbers. After the labours of the day we sometimes passed the evenings in the villas of the rich Greek merchants, which were nearly all on the east of the town. Most of these houses were of recent construction, and were filled with mirrors, fine carpets, and engravings. In front of the house, and in the centre of a large paved and trellised court, there were fountains, sometimes ornamented with considerable taste, in which, on great occasions, a slender jet of water would give coolness to the air. The angles of nearly every one of these fountains were marked with small white marble lions, heavy and awkward in shape, but nevertheless considered at Angora to be the last word of art. They are imported from Constantinople together with the basins of the fountains.

In spite of all this, however, some doubts may be felt as to the destination of the lions found among the Chaldæan ruins. The only monument there discovered which seems to have certainly

[1] LOFTUS says nothing of this lion in those *Travels and Researches* which we have so often quoted. It was, perhaps, on a later occasion that he found it. We came upon it in a collection of original sketches and manuscript notes (*Drawings in Babylonia by W. K. Loftus and H. Churchill*) in the custody of the keeper of Oriental antiquities at the British Museum. We have to express our acknowledgments to Dr. Birch for permission to make use of this valuable collection.

[2] PERROT, GUILLAUME ET DELBET, *Exploration archéologique de la Galatie*, vol. ii. pl. 32.

[3] *Exploration archéologique*, vol. ii. pl. 11.

belonged to an architectural decoration is one found by Sir Henry Layard in his too soon interrupted explorations in the Kasr. It is a fragment of a limestone slab from the casing of a façade (Fig. 113). The upper parts of two male figures support a broken entablature beneath which the name of some divinity is cut.[1]

The chief interest of this fragment lies in the further evidence it affords of a close connection between the arts of Chaldæa and those of Babylon. There is nothing either in the costume or features of these individuals that may not be found in Assyria. The tiara with its plumes and rosettes, the crimped hair and beard, the baton with its large hilt, are all common to both countries, while the

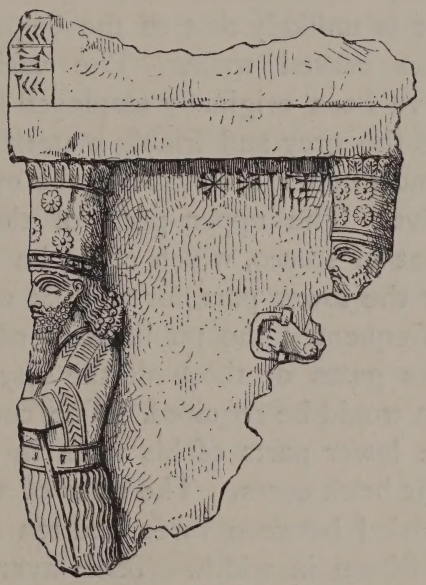


FIG. 113.—Fragment from Babylon. British Museum. Height 11 inches, width 9 inches.

latter object is to be found on the rocks of Bavian and as far north as the sculptures of Cappadocia.

A study of those reliefs in which nothing but purely ornamental motives are treated, leads us to exactly the same conclusion. Take for instance the great bronze threshold from Borsippa, of which we have already spoken; the rosettes placed at intervals along its tread are identical with those encountered in such numbers in Assyria.

In the extreme rarity of stone in his part of the world the Chaldæan architect seems to have practically reserved it for

[1] LAYARD, *Discoveries*, p. 508.

isolated statues, for votive bas-reliefs, for objects of an iconic or religious character, but nevertheless, we have sufficient evidence to prove that such decorative sculpture as found a place in the Chaldæan buildings, did not sensibly differ from that to which Assyria has accustomed us.

From all that we have said as to the distribution of stone, it will be understood that we must turn to Assyria to obtain a clear idea of the measures by which buildings of crude brick were rendered more sightly by ornament in the harder material. We can hardly imagine an Assyrian palace without those series of bas-reliefs which now line the walls of our museums much in the same fashion as they covered those of Sargon's and Sennacherib's palaces, and yet it is unlikely that in the beginning the Assyrian palaces had these carved walls. The casing of stone and alabaster must have been originally employed for more utilitarian purposes—to hide the grey and friable material within, to protect it from damage, and to offer a surface to the eye which should at least be inoffensive. The upper parts of the walls would be covered with a coat of stucco, which could be renewed whenever necessary, but for the lower part, for all that was within reach of the crowds that frequented the public halls of the seraglio, who passed through its gates or those of the city itself, some more efficient protection would be required. The constructor was thus led to encase the lower parts of his walls in a cuirass of stone imposed upon their brick cores. The slabs of which he made use for this purpose varied between three and ten feet in height, and between six and fifteen in width. Their average thickness was about eight inches.

The way in which these slabs were fixed is hardly worthy of such clever builders, and, in fact, the Assyrians seem to have never succeeded in mastering the difficulties inherent in the association of two heterogeneous materials. The slabs were of gypsum or limestone, the wall of pisé, materials which are not to be easily combined. The Assyrians contented themselves with simply placing the one against the other. No trace of any tie is to be found. A "tooth" has been given to the inner faces of the slabs by seaming them in every direction with the chisel, and, perhaps, some plastic substance may at the last moment have been introduced between them and the soft clay, but no trace of any other contrivance for keeping the two materials together has been found.

After the general mass of the building—its clay walls and vaults —were complete, a different class of workmen was brought in to line its chambers and complete their decoration. The crude brick would by that time have become dry, and no longer in a condition to adapt itself to the roughnesses of the alabaster slabs. The liquid clay, like that of an earthenware "body," wets and softens the surface of the brick while it enters into every hollow of the stone and so allies the one with the other. We recommend this conjecture to those who may undertake any future excavation in Assyria. It lies with them to confirm or refute it.

However this may have been, the constructor made use of more than one method of giving greater solidity to his walls as a whole. His slabs were not only let into each other at the angles, in some chambers there were squared angle pieces of a diameter great enough to allow them to sink more deeply into the crude brick behind, and thus to offer steady points of support in each corner. Finally the separate slabs were held together at the top by leaden dovetails like the metal clamps used to attach coping stones to each other.

Such precautions were rendered comparatively useless by the fact that the whole work was faulty at the base. Halls and chambers had no solid foundation or pavement, so that the heavy slabs of their decoration rested upon a shifting soil, quite incapable of carrying them without flinching. In many places they sank some inches into the ground, the soft earth behind pushing them forward, and in their fall the row to which they belonged was inevitably involved. The excavators have again and again found whole lines of bas-reliefs that appeared to have fallen together. Such an accident is a thing for posterity to rejoice over. Prone upon a soft and yielding soil the works of the sculptor are better protected than when standing erect, their upper parts clear, perhaps, of the ruin that covers their feet, and exposed to the weather at least, and, too often, to the brutality of an ignorant population.

Such defects are sufficient to prove that these slabs were never meant to carry any great weight; far from affording a support to the wall behind, they required one to help them in maintaining their own equilibrium. On the other hand they protected it, as we have said above, from too rapid deterioration.

At Khorsabad this stone casing is in very bad condition at

many points, in the halls and passages of the outbuildings and in the courtyards adjoining the city gates for instance.[1] There the stones are only smoothed down, and their obvious purpose is merely to protect the crude brick within. The purely architectural origin of this system of casing is thus clearly shown.

But the presence of these slabs set upright against the wall offered a temptation to the ambitious architect that he was not likely to resist. The limestone and alabaster of which they were composed afforded both a kindly surface for the chisel, and a certain guarantee of duration for the forms it struck out. In every Assyrian palace we may see that the king, its builder, had a double object in view, the glorification of the gods, and the transmission to posterity of his own image and the memory of his reign. To these ends the architect called in the sculptor, under whose hands the rudely dressed slabs took the historic forms with which we are familiar.

Of all parts of the palace the doorways were most exposed to injury from the shocks of traffic, and we find their more solid plinths surmounted by higher and thicker slabs than are to be found elsewhere. These slabs are carved with the images of protecting divinities. Huge winged and man-headed bulls (Plate X)[2] or lions (Fig. 114), the speaking symbols of force and thought, met the approaching visitor. Sometimes a lion, reproducing with singular energy the features of the real beast, was substituted for the human-headed variety (Plate VIII).[3]

These guardians of the gate always had the front part of their bodies salient in some degree from the general line of the wall. The head and breast, at least, were outside the arch. Right and

[1] Place, *Ninive*, vol. ii. pp. 68-70.

[2] This character of a tutelary divinity that we attribute to the winged bull is indicated in the clearest manner in the cuneiform texts: "In this palace," says Esarhaddon, "the *sedi* and *lamassi* (the Assyrian names for these colossi) are propitious, are the guardians of my royal promenade and the rejoicers of my heart, may they ever watch over the palace and never quit its walls." And again: "I caused doors to be made in cypress, which has a good smell, and I had them adorned with gold and silver and fixed in the doorways. Right and left of those doorways I caused *sedi* and *lamassi* of stone to be set up, they are placed there to repulse the wicked." (St. Guyard, *Bulletin de la Religion assyrienne*, in the *Revue de l'Histoire des Religions*, vol. i. p. 43, note.)

[3] Place, *Ninive*, vol. iii. plate 21.

left of the passage were very thick slabs, also carved into the form of winged bulls in profile, and accompanied by protecting genii. These latter divinities are sometimes grave and noble in mien, obviously benevolent (Figs. 8 and 29), sometimes hideous in face, and violent in gesture. In the latter case they are meant to frighten the profane or the hostile away from the dwelling they

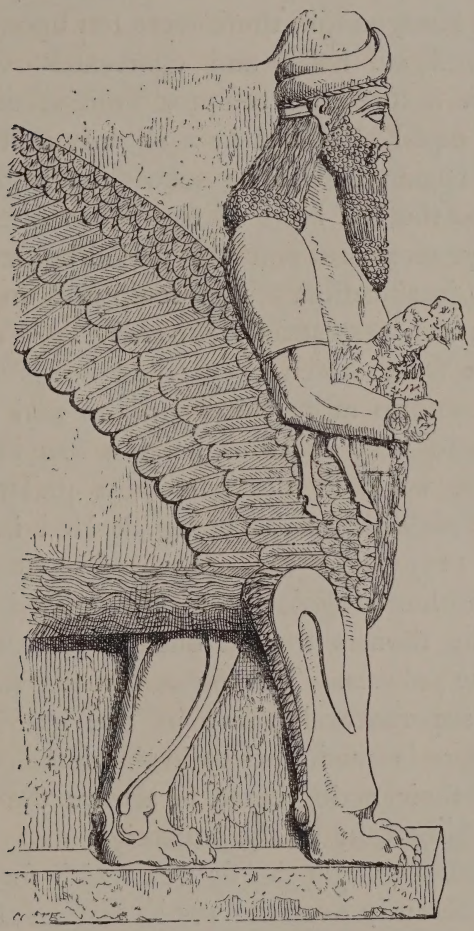


FIG. 114.—Human-headed lion. Nimroud ; from Layard.

guard (Figs. 6 and 7). All these figures are in much higher relief than the sculptures in the inner chambers.

All this shows that the sculptor thoroughly understood how to make the best of his opportunities when he was once called in to ornament those massive door-frames and slabs which at first were no more than additional supports for the building to which they were applied. He varied the shapes of these blocks according to

their destined sites, and increased their size so as to give gigantic proportions to his man-headed bulls and lions. Some of the winged bulls are from sixteen to seventeen feet high.[1] In spite of the labour expended upon the carving and putting in place of these huge figures, they are extremely numerous, hardly less so, indeed, than the Osiride piers of Egypt.[2] In the palace of Sargon at Khorsabad, twenty-six pairs have been counted; in that of Sennacherib at Kouyundjik, there were ten upon a single façade.[3]

In those passages, halls, and courtyards, whose destination justified such a luxury, the sculptor utilized the stone lining of the walls with equal skill, but in a slightly different spirit. The figures on the façade had to be seen from a great distance, and were exposed to the full light of the Mesopotamian sun, so that their colossal proportions and the varied boldness of their relief had an obvious justification. The sculptures in the interior were smaller in scale and were strictly *bas-reliefs*. With the shortening of the distance from which they could be examined, their scale was made to conform more closely to the real stature of human beings. In some very spacious halls a few of the figures are larger than life, while in the narrowest galleries they become very small, the alabaster slabs being divided into two stories or more (see Fig. 115).[4]

There is another singularity to be noticed *apropos* of these sculptures. The themes treated outside are very different from those inside the palaces. The figures in the former position are religious and supernatural, those in the interior historical and anecdotic. There is much variety in the details of these narrative sculptures, but their main theme is always the glorification, and, in a sense, the biography of the sovereign.

In the Egyptian temple the figures which form its *illumination* are spread indifferently over the whole surface of the walls. In a Greek temple, on the other hand, sculpture was confined with rare

[1] Those in the Louvre are fourteen feet high; the tallest pair in the British Museum are about the same.

[2] *Art in Ancient Egypt*, vol. ii. pt. ii. p. 92, fig. 70.

[3] On the subject of these winged bulls see Fr. Lenormant, *Les Origines de l'Histoire*, vol. i. chap. 3.

[4] The bas-relief here reproduced comes from the palace of Assurbanipal at Kouyundjik. In the fragment now in the Louvre there are three stories, but the upper story, being an exact repetition of that immediately below it, has been omitted in our engraving.

FIG. 115.—Bas-relief with several registers. Width 38 inches. Louvre. Drawn by Bourgoin.

exceptions to the upper part of the building, to the pediments chiefly, and the frieze. The Assyrian method was neither that of the Egyptians nor that of the Greeks. At Nineveh, the sculptor did not, as in Egypt, sow his figures broadcast over the whole length and breadth of the building, neither did he raise them, as in Greece, above the heads of the crowd; he marshalled them upon the lowest part of a wall, upon its plinth. Their feet touched the soil, their eyes were on a level with those that looked at them; we might say that they formed an endless procession round every hall and chamber. The reasons for such an arrangement are to be sought for, not in any æsthetic tendency of the Assyrian artist, but in the simple fact that only in the stone cuirass, within which the lower parts of the brick walls were shut up, could he find the kindly material for his chisel. Nowhere else in the whole building could the stone, without which his art was powerless, be introduced.

But as the lateral development of Assyrian buildings was great, so too was the field offered to the Assyrian sculptor. It has been calculated that the sculptured slabs found in the palace of Sargon would, if placed in a row, cover a distance of nearly a mile and a half. Their superficies is equal to about an acre and a half. By this it will be seen that sculpture played an important part in the decoration of an Assyrian palace, but as it was confined to the lower part of the walls, some other method had to be invented for ornamenting those surfaces on which the chisel could not be used. In Chaldæa, where there was so little stone, it was practically the whole building that had to be thus contrived for. In both countries the problem was solved in the same fashion—by the extensive use of enamelled brick and painted stucco, and the elaboration of a rich, elegant, and withal original system of polychromy.

Explorers are unanimous in the opinion that neither burnt nor sun-dried brick was ever left without something to cover its nakedness. It was always hidden and protected by a coat of stucco.[1] At Nineveh, according to M. Place, this stucco was formed by an intimate mixture of burnt chalk with plaster, by which a sort of white gum was made that adhered very tightly to the clay wall.[2]

[1] LOFTUS, *Travels and Researches*, p. 176. LAYARD, *Discoveries*, pp. 529, 651. BOTTA, *Monument de Ninive*, vol. v. p. 44. In the book of Daniel the hand that traces the warning words upon the walls of Belshazzar's palace traces them "*upon the plaster of the wall*" (DANIEL v. 5). [2] PLACE, *Ninive*, vol. i. p. 77.

Its peculiar consistence did not permit of its being spread with a brush; a trowel or board must have been used. The thickness of this cement was never more than one or two millimetres.[1] Its cohesive force was so great that in spite of its thinness it acted as an efficient protector. It has often been found in excellent condition, both upon flat and curved surfaces, upon the walls of courtyards and chambers, on the under sides of vaults, wherever in fact a stone casing did not supply its place.

It would seem that some buildings had no outward ornament beyond the brilliant whiteness of this stucco, the effect of which may be seen at the present day in the whitewashed houses of the East. The glare of such a wall was happily contrasted with the soft verdure that sometimes grew about it, and the dark blue of the sky against which its summit was relieved. Such a contrast gives importance and accent to the smallest building, as painters who treat the landscapes of the South thoroughly understand.

We have reason to believe, however, that as a rule the white stucco served as a background and support to other colours. No Chaldæan interiors have come down to us, while the exteriors are in such bad preservation that we can hardly form any true judgment of the colours and designs with which they were once adorned. But in the case of Assyria we know pretty well how the decorator understood his business, and it is probable that, like his colleagues, the architect and the sculptor, he was content to perpetuate the traditions of his Chaldæan masters.

In certain cases the decorator makes use of wide unbroken tints. This is the simplest way of using colour. In the palace of Sargon, for instance, wherever the sculptured slabs are absent we find a plinth painted black in distemper. These plinths are from two to nearly four feet high, according to the extent of the courts or chambers in which they occur. The object of such a dado is clear; it was to protect the lower part of the wall, if not against deliberate violence, at least against dirt. A white stucco in such a position would soon have been disfigured by spots and various marks which would be invisible on a black background. Moreover, the contrast between the plinth and the white wall above it must have had a certain decorative effect.[2]

[1] At Warka, however, Loftus found in the building he calls *Wuswas* a layer of plaster which was from two to four inches thick. (*Travels*, p. 176.)

[2] Place, *Ninive*, vol. ii. pp. 77, 78.

This coloured dado is to be found even in places to which it seems quite unsuited. At Khorsabad, for instance, it runs across the foot of those semicircular pilasters we noticed in one of the harem chambers (Fig. 101). These pilasters stand upon a plinth between three and four feet high, so that any contact with the dirt of the floor need not have been feared. The existence of the dado in such a position is to be accounted for by supposing that the decorator considered it as the regular ornament for the bottom of a wall. It is more difficult to understand why the alcoves believed by MM. Place and Thomas to have been bedrooms were in each case painted with this same band of black.[1]

The most curious example of the employment of unbroken tints to which we can point, is in the case of M. Place's observatory. The stages of that building were each about twenty feet high, and each was painted a colour of its own; the first was white, the second black, the third red, the fourth white. When the excavations were made, these tints were still easily visible. The building seems originally to have had seven stages, and the three upper ones must certainly have been coloured on the same principle as those below them. In his restoration, Thomas makes the fifth vermilion, the sixth a silver grey, while he gilds the seventh and last.[2] In this choice and arrangement of tints there is nothing arbitrary. It is founded on the description given by Herodotus of Ecbatana, the capital of the Medes. "The Medes . . . . . built the city now called Agbatana, the walls of which are of great size and strength, rising in circles one within the other. The plan of the place is, that each of the walls should outtop the one beyond it by the battlements. The nature of the ground, which is a gentle hill, favours this arrangement in some degree, but it was mainly effected by art. The number of the circles is seven, the royal palace and the treasuries standing within the last. The circuit of the outer wall is very nearly the same with that of Athens. Of this wall the battlements are white, of the next black, of the third scarlet, of the fourth blue, of the fifth orange; all these are coloured with paint. The two last have their battlements coated respectively with silver and gold."[3]

[1] PLACE, *Ninive*, vol. iii. plate 25.

[2] *Ibid.*, vol. i. pp. 141-146; vol. ii. pp. 79, 80; vol. iii. plates 36 and 37.

[3] HERODOTUS (Rawlinson's translation), i. 98.

Between the series of colours found upon the ruin in question and the list here given by Herodotus there is, so far as they go, an identity which cannot be due to chance. The Medes and Persians invented nothing; their whole art was no more than an eastern offshoot from that of Mesopotamia. It was in Chaldæa that the number seven first received an exceptional and quasi sacred character. Our week of seven days is a result from the early worship of the five great planets and of the sun and moon. There were also the seven colours of the rainbow. From such indications as these the early architects of Assyria must have determined the number of stages to be given to a religious building; they also regulated the order of the colours, each one of which was consecrated by tradition to one of those great heavenly bodies. We can easily understand how the silver white of the penultimate stage was chosen to symbolize the moon, while the glory of the gold upon the upper story recalled that of the noonday sun.

Thus must we figure the tower with seven stages which Nebuchadnezzar boasted of having restored in more than its early magnificence. These arrangements of coloured bands had a double value. Each tint had a symbolic and traditional signification of its own, and the series formed by the seven was, so to speak, a phrase in the national theology, an appeal to the imagination, and a confession of piety. At the same time the chief divisions of the monument were strongly marked, and the eye was attracted to their number and significance, while the building as a whole was more imposing and majestic than if its colour had been a uniform white from base to summit. The colours must have been frequently renewed.

In the interior, where the temperature was not subject to violent changes, where there was neither rain nor scorching sun, the architect made use of painting in distemper to reinforce the decoration in his more luxurious chambers. Unfortunately these frescoes are now represented by nothing but a few fragments. In the course of the excavations numerous instances of their use were encountered, but in almost every case exposure to the air was rapidly destructive of their tints, and even of their substance. They occurred chiefly in the rooms whose walls were lined in their lower parts with sculptured slabs. By dint of infinite painstaking M. Place succeeded in copying a

few fragments of these paintings.[1] According to the examples thus preserved for us, human figures were mingled with purely ornamental motives such as plumes, fillets, and rosettes. The colours here used were black, green, red, and yellow, to which may be added a fifth in the white of the plaster ground upon which they were laid. Flesh tints were expressed by leaving this white uncoloured.

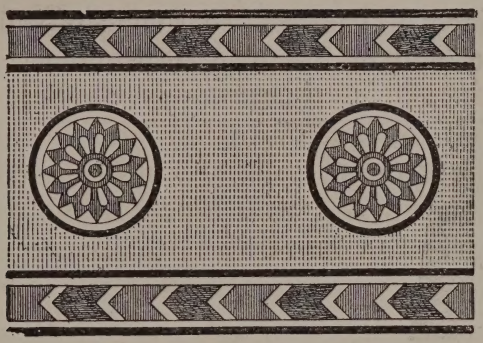


FIG. 116.—Ornament painted upon plaster ; from Layard.

Several fragments of these painted decorations have also been preserved by Sir Henry Layard. The simplest of them all is a broad yellow band edged on each side by a line of alternately red and blue chevrons separated from each other by white lines. Down the centre of the yellow band there is a row of blue

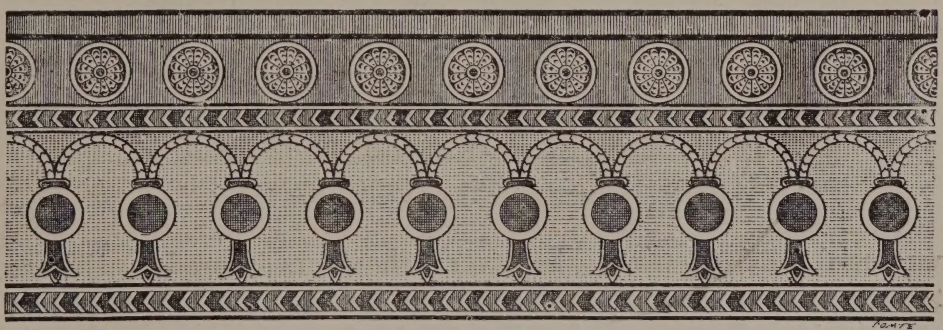


FIG. 117.—Ornament painted upon plaster; from Layard.

and white rosettes (Fig. 116). Another example in which the same colours are employed is at once more complex and more elegant (see Fig. 117). Finally, in a third fragment, a slightly simplified version of this latter motive serves as a lower border

[1] PLACE, *Ninive*, vol. iii. plate 32.

to a frieze upon which two bulls face each other, their white bodies being divided from the yellow ground by a thick black line. The battlements at the top are dark blue (Fig. 118). An idea of the tints used in this decoration may be obtained from Fig. 2 of our plate xiv.

It was upon the upper parts of walls where they were beyond the reach of accidental injury that these painted decorations were placed. M. Place had reason to think that they were also used on the under-sides of vaults. In rooms in which a richer and more permanent kind of ornament was unnecessary, paint alone

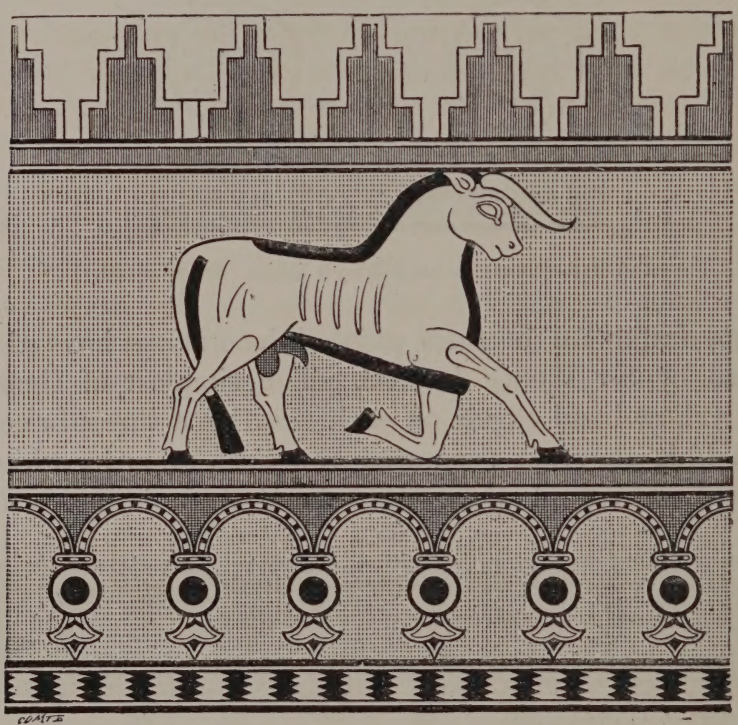


Fig. 118.—Ornament painted upon plaster; from Layard.

was used for decoration. In several chambers cleared by George Smith at Nimroud, that explorer found horizontal bands of colour, alternately red, green, and yellow, and where the stone casing of the lower walls was not sculptured, these stripes were continued over its surface.[1]

The artist to whom the execution of this work was intrusted must have arranged so that his tints were in harmony with those

[1] G. Smith, *Assyrian Discoveries*, pp. 77, 78. Layard (*Nineveh*, vol. ii. p. 130) also says that some rooms had no other decoration.

placed by another brush on many details of the sculptured slabs. We shall discuss the question of polychromy in Assyrian sculpture at a future opportunity; at present we are content with observing that the effect of the reliefs was strengthened here and there by the use of colour.

The beard, the hair, and the eyebrows were tinted black; such things as the fringes of robes, baldricks, flowers held in the hand, were coloured blue and red. The gaiety thus given brought a room into harmony, and prevented the cool grey of the alabaster slabs from presenting a disagreeable contrast with the brilliant tones spread over the roofs and upper walls.

We might thus restore the interior of an Assyrian apartment and arrive at a whole, some elements of which would be certainly authentic and others at least very probable. The efforts hitherto made in this direction leave much to be desired, and give many an opportunity to the fault-finding critic; and that because their makers have failed to completely master the spirit of Mesopotamian architecture as shown in its remaining fragments.[1]

It would be much less easy, it would in fact be foolhardy, to attempt the restoration of a hall from a Babylonian palace. Our information is quite insufficient for such a task. We may affirm, however, that where the architect had no stone to speak of, the decorations must have had a somewhat different character from those in which that invaluable material was freely used. The general tendencies of both countries must have been the same, but between Nineveh and Babylon, still more between the capital of Assyria and the towns of Lower Chaldæa, there were differences

[1] In writing thus we allude chiefly to the restorations given by Mr. James FERGUSSON in *The Palaces of Nineveh and Persepolis Restored* (1 vol. 8vo. Murray), a work that was launched upon the world at far too early a date, namely, in 1851. Sir H., then Mr., LAYARD, had not yet published his second narrative (*Discoveries in the Ruins of Nineveh and Babylon*) nor the second series of *Monuments of Nineveh*, neither had the great work of MM. Place and Thomas on the palace of Sargon (a work to which we owe so much new and authentic information) appeared. In Mr. Fergusson's restorations the column is freely used and the vault excluded, so that in many respects his work seems to us to be purely fanciful, and yet it is implicitly accepted by English writers to this day. Professor RAWLINSON, while criticising Mr. Fergusson in his text (*The Five Great Monarchies*, vol. i. p. 303, note 6), reproduces his restoration of the great court at Khorsabad, in which a colonnade is introduced upon the principle of the hypostyle halls of Persepolis. Professor Rawlinson would, perhaps, have been better advised had he refrained from thus popularizing a vision which, as he himself very justly declares, is quite alien to the genius of Assyrian architecture.

of which now and then we may succeed in catching a glance. Compelled to trust almost entirely to clay, the artist of Chaldæa must have turned his attention to colour as a decoration much more exclusively than his Assyrian rival.

His preoccupation with this one idea is betrayed very curiously in the façade of one of those ruined buildings at Warka which Loftus has studied and described.[1] We borrow his plan and elevation of the detail to which we refer (Fig. 119).

In the first place the reader will recognize those semi-circular pilasters or gigantic reeds to which we have already alluded as strongly characteristic of Chaldæan architecture, and one of the most certain signs of its origin. The chevrons, the spiral lines and

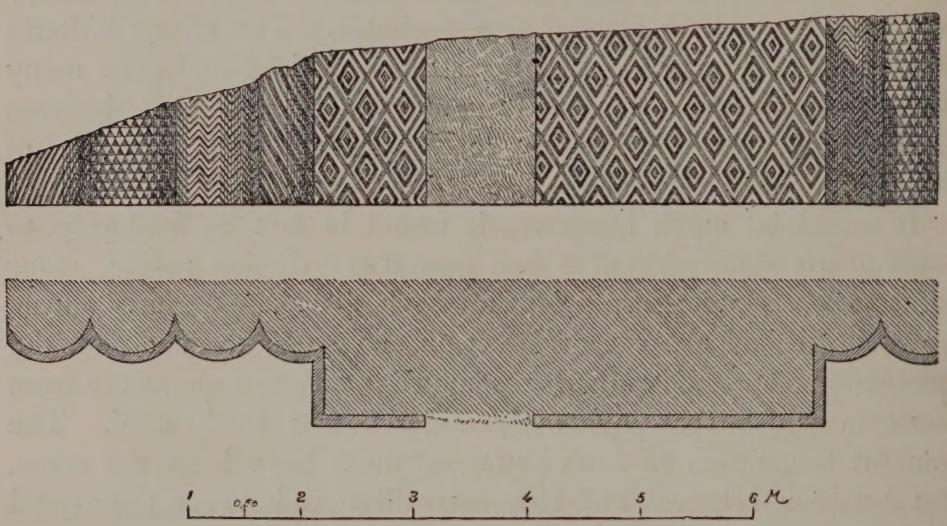


FIG. 119.—Plan and elevation of part of a façade at Warka ; from Loftus.

lozenges of the coloured decoration with which the semi-columns, and the salient buttress by which they are divided into two groups, are covered, should be curiously noticed. The ornament varies with each structural division. Loftus, however, was chiefly struck by the process used to build up the design. The whole face of the wall is composed of terra-cotta cones (Fig. 120) engaged in a mortar composed of mud mixed with chopped straw. The bases of these cones are turned outwards and form the surface of the wall. Some preserve the natural colour of the terra-cotta, a dark yellow, others have been dipped—before fixing no doubt—in baths of red and black colouring matter. By the

[1] LOFTUS, *Travels and Researches*, pp. 187-189.

aid of these three tints an effect has been obtained that, according to Loftus, is far from being disagreeable. The process may be compared to that of mosaic, cones of terra-cotta being substituted for little cubes of coloured stone or glass.[1]

Upon the same site M. Loftus found traces of a still more singular decoration. A mass of crude brick had its horizontal courses divided from each other by earthenware vases laid so that their open mouths were flush with the face of the wall. Three courses of these vases were placed one upon another, and the curious ornament thus made was repeated three times in the piece of wall left standing. The vases were from ten to fifteen inches long externally, but inside they were never more than ten inches deep, so that their conical bases were solid.[2] The dark shadows of their open mouths afforded a strong contrast with the white plaster which covered the brickwork about them. The consequent play of light and shadow unrelieved by colour was pleasing enough. In spite, however, of their thick walls, these vases could hardly resist successfully the weight of the bricks above and the various disintegrating influences set up by their contraction in drying. Most of the vases were broken when Loftus saw them, though still in place.

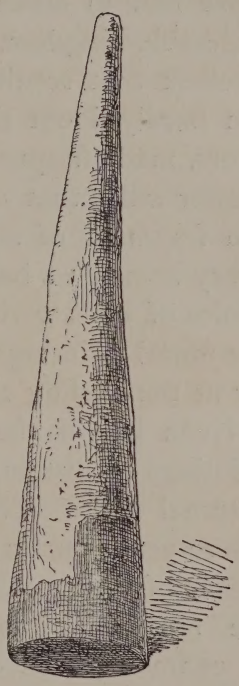


FIG. 120.—Cone with coloured base; from Loftus.

Cone mosaics and the insertion of vases among the bricks

[1] LOFTUS thinks that the process was very common, at least in Lower Chaldæa. He found cones imbedded in mortar at several other points in the Warka ruins, but the example we have reproduced is the only one in which well-marked designs could still be clearly traced. TAYLOR saw cones of the same kind at Abou-Shareyn. They had no inscriptions, and their bases were black (*Journal of the Royal Asiatic Society*, vol. xv. p. 411). They formed in all probability parts of a decoration similar to that described by Loftus. In Egypt we find cones of terra-cotta crowning the façades of certain Theban tombs (RHIND, *Thebes, its Tombs and their Tenants*, p. 136). Decoratively they seem allied to the cones of Warka, but the religious formulæ they bear connects them rather with the cones found by M. de Sarzec at Tello, which bear commemorative inscriptions. To these we shall return at a later page.

[2] LOFTUS, *Travels and Researches*, pp. 190, 191.

afforded after all but a poor opportunity to the decorative architect. Had the builders of Chaldæa possessed no more efficient means than these of obtaining beauty, their structures would hardly have imposed themselves as models upon their rich and powerful neighbours of Assyria so completely as they did. Some process was required which should not restrict the decorator to the curves and straight lines of the simpler geometrical figures, which should allow him to make use of motives furnished by the animal and vegetable kingdom, by man and those fanciful creations of man's intellect that resulted from his attempts to figure the gods. We can hardly doubt that the Chaldæans, like their northern neighbours, made frequent use of paint in the decoration of the wide plaster walls that offered such a tempting surface to the brush. No fragment of such work has come down to us, but we have every reason to believe that the arrangement of motives and the choice of lines were the same as in Assyria. We may look upon the mural paintings in the Ninevite palaces as copies preserving for us the leading characteristics of their Chaldæan originals.

Even in Chaldæa, which had a drier climate than Assyria, paintings in distemper could not have had any very long life on external walls. They had not to do with the sky of Upper Egypt where years pass away without the fall of a single shower. Some means of fixing colour so that it should not be washed away by the first rain was sought, and it was found in the invention of enamel, in the coating of the bricks with a coloured material that when passed with them through the fire would be vitrified and would sink to some extent into their substance. A brick thus coated could never lose its colour; the latter became insoluble, and so intimately combined with the block to which it was attached that one could hardly be destroyed without the other. Sir H. Layard tells us that many fragments of brick found in the Kasr were covered with a thick glaze, the colours of which had in no way suffered with time. Fragments of ornaments and figures could be distinguished on some of them. The colours most often found were a very brilliant blue, red, dark yellow, white, and black.[1]

We have again to look to the Assyrian ruins for information

[1] Layard, *Discoveries*, p. 607. Rich also bears witness to the abundance of these remains in his *Journey to the Ruins of Babylon*. See also Oppert, *Expédition scientifique*, vol. i. p. 143.

as to the way in which these enamelled bricks were composed into pictures. No explorer has found anything in the remains of a Chaldæan city that can be compared to the archivolt of enamelled bricks discovered by M. Place over one of the gateways of the city founded by Sargon.[1]

We can hardly doubt however that the art of the enameller was discovered in Chaldæa and thence transported into Assyria. Everything combines to give us that assurance, an examination of the ruins in Mesopotamia and of the objects brought from them as well as the explicit statements of the ancients.

Every traveller tells that there is not a ruin at Babylon in which hundreds of these enamelled bricks may not be picked up, and they are to be found elsewhere in Chaldæa.[2] A certain number of fragments are now in the British Museum and the Louvre with indications upon them leaving no doubt as to whence they came.[3] As for the blocks of the same kind coming from Nineveh and its neighbourhood they are very numerous in our collections. It is easy therefore to compare the products of Chaldæan workshops with those of Assyrian origin. The comparison is not to the advantage of the latter. The enamel on the Babylonian bricks is very thick and solid; it adheres strongly to the clay, and even when brought to our comparatively humid climates it preserves its brilliancy. It is not so with bricks from Khorsabad and Nimroud, which rapidly tarnish and become dull when withdrawn from the earth that protected them for so many centuries. Their firing does not seem to have been sufficiently prolonged.[4]

[1] A French traveller of the last century, DE BEAUCHAMP (he was consul at Bagdad), heard an Arab workman and contractor describe a room he had found in the Kasr, the walls of which were lined with enamelled bricks. Upon one wall, he said, there was a cow with the sun and moon above it. His story must, at least, have been founded on truth. No motive occurs oftener in the Chaldæan monuments than a bull and the twin stars of the day and night. (See RENNELL, *History of Herodotus*, p. 367.)

[2] LOFTUS collected some fragments of these enamelled bricks at Warka, "similar to those found," he says, "at Babylon in the ruins of the Kasr" (*Travels and Researches*, p. 185). TAYLOR also tells us that he found numerous fragments of brick enamelled blue at Mugheir (*Journal of the Royal Asiatic Society*, vol. xv. p. 262).

[3] The most interesting of these fragments, those that allow the subject of which they formed a part to be still divined, have been published by M. DE LONGPERIER, *Musée Napoléon III.* plate iv.

[4] I examined at the British Museum the originals of the glazed bricks reproduced by Layard in his first series of *Monuments*, some of which we have copied in our

Necessity is the mother of invention, the proverb says. If there be any country in which clay has been compelled to do all that lay in its power it must surely be that in which there was no other material for the construction and decoration of buildings. The results obtained by the enameller were pretty much the same in Assyria and Chaldæa, and we are inclined to look upon the older of the two nations as the inventor of the process, especially as it could hardly have done without it so well as its younger rival, and in this opinion we are confirmed by the superior quality of the Babylonian enamel. It is possible that there may be some truth in the assertion that most of the glazed bricks that have come down to us belonged to the restorations of Nebuchadnezzar; but even supposing that to be so, they show a technical skill so consummate and sure of itself that it must then have been very far removed from its infancy. The fatherland of the enameller is Southern Mesopotamia and especially Babylonia, where enamelled bricks seem to have been used in extraordinary quantities.

The wall of Dour-Saryoukin, the town built by Sargon, has been found intact for a considerable part of its height. As in the retaining wall of the palace, coloured brick has there been used with extreme discretion. It is found only over the arches of the principal doors and, perhaps, in the form of rosettes at the springing of the battlements. The remainder of the great breadths of crude brick was coated with white plaster.[1]

It was otherwise at Babylon. Ctesias, who lived there for a time, thus describes the palace on the right bank of the Euphrates: "In the interior of the first line of circumvallation Semiramis constructed another on a circular plan, upon which there are all kinds of animals stamped on the bricks while still unburnt; nature is imitated in these figures by the employment of colours.[2] . . . The third wall, that in the middle, was twenty stades round . . .

plates xiii. and xiv. The outlines of the ornament are now hardly more than distinguishable, while the colour is no more than a pale reflection.

[1] Loftus believes that the external faces of Assyrian walls were not, as a rule, cased in enamelled bricks. He disengaged three sides of the northern palace at Kouyundjik without finding any traces of polychromatic decoration. (*Travels and Researches*, p. 397, note.)

[2] Καθ' ὃν ἐν ὠμαῖς ἔτι ταῖς πλίνθοις διετετύπωτο θηρία, παντοδαπὰ τῇ τῶν χρωμάτων φιλοτεχνίᾳ τὴν ἀλήθειαν ἀπομιμούμενα (Diodorus, ii. 8, 4). Diodorus expressly declares that he borrows this description from Ctesias (ὡς Κτησίας φησίν, *ibid.* 5).

on its towers and their curtain-walls every sort of animal might be seen imitated according to all the rules of art, both as to their form and colour. The whole represented the chase of various animals, the latter being more than four cubits (high)—in the middle Semiramis on horseback letting fly an arrow against a panther and, on one side, her husband Ninus at close quarters with a lion, which he strikes with his lance."[1]

Diodorus attributes all these buildings to his fabulous Semiramis. He was mistaken. It was the palace built by Nebuchadnezzar that he had before him ; his eyes rested upon the works of those sovereigns of the second Chaldee empire who presided at a real art renaissance—at the re-awakening of a civilization that was never more brilliant than in the years immediately preceding its fall. The historian's mistake is of little importance here. We are mainly interested in the fact that he actually saw the walls of which he speaks and saw them covered with pictures, the material for which was furnished by enamelled brick.

These bricks must have been manufactured in no small quantity to permit of decorations in which there were figures nearly six feet high.[2] We may form some idea of this frieze of animals from one in the palace of Sargon at the foot of the wall on each side of the harem doorway (plate xv.).[3] As for the hunting incidents, we may imagine what they were like from the Assyrian sculptures (Fig. 5).

At Babylon as at Nineveh the palette of the enameller was very restricted. Figures were as a rule yellow and white relieved against a blue ground. Touches of black were used to give accent to certain details, such as the hair and beard, or to define a contour. The surface of the brick was not always left smooth ; in some cases it shows hollow lines in which certain colours were placed when required to mark distinctive or complementary features. As a rule motives were modelled in relief upon the ground, so that they were distinguished by a gentle salience as well as by colour,

[1] Ἐνῆσαν δὲ ἐν τοῖς πύργοις καὶ τείχεσι ζῶα παντοδαπὰ φιλοτέχνως τοῖς τε χρώμασι καὶ τοῖς τῶν τύπων ἀπομίμασι κατασκευασμένα. (DIODORUS ii. 8, 6.)

[2] Παντοίων θηρίων . . . . ὧν ἦσαν τὰ μεγέθη πλεῖον ἢ πήχων τεττάρων. Four cubits was equal to about five feet eight inches. At Khorsabad the tallest of the genii on the coloured tiles at the door are only 32 inches high ; others are not more than two feet.

[3] PLACE, *Ninive*, vol. iii. plates 24 and 31.

a contrivance that increased their solidity and effect.[1] This may be observed on the Babylonian bricks brought to Europe by M. Delaporte, consul-general for France at Bagdad. They are now in the Louvre. On one we see the three white petals belonging to one of those Marguerite-shaped flowers that artists have used in such profusion in painted and sculptured decoration (Figs. 22, 25, 96, 116, 117). Another is the fragment of a wing, and must have entered into the composition of one of those winged genii that are hardly less numerous in Assyrian decoration (Figs. 4, 8, and 29). Upon a third you may recognize the trunk of a palm-tree and on a fourth the sinuous lines that edge a drapery.[2] M. de Longperier calculated from the dimensions of this latter fragment that the figure to which it belonged must have been four cubits high, exactly the height assigned by Ctesias to the figures in the groups seen by him when he visited the palace of the ancient kings.[3]

M. Oppert also mentions fragments which had formed part of similar important compositions. Yellow scales separated from one another by black lines, reminded him of the conventional figure under which the Assyrians represented hills or mountains; on others he found fragments of trees, on others blue undulations, significant, no doubt, of water; on others, again, parts of animals —the foot of a horse, the mane and tail of a lion. A thick, black line upon a blue ground may have stood for the lance of a hunter. Upon one fragment a human eye, looking full to the front, might be recognized.[4] We might be tempted to think that in these remains M. Oppert saw all that was left of the pictures which excited the admiration of Ctesias.

Inscriptions in big letters obtained by the same process accompanied and explained the pictures. The characters were white on a blue ground. M. Oppert brought together some fifteen of these monumental texts, but he did not find a single fragment upon which there was more than one letter. The inscriptions were meant to be legible at a considerable distance, for the letters

[1] "The painting," says M. Oppert, "was applied to a kind of roughly blocked-out relief." (*Expédition scientifique*, vol. i. p. 144.)

[2] De Longperier, *Musée Napoléon III.*, plate iv.

[3] This palace was then inhabited for a part of the year by the Achemenid princes, of whom Ctesias was both the guest and physician.

[4] Oppert, *Expédition scientifique*, vol. i. pp. 143, 144.

were from two to three inches high. In later days Arab architects followed the example thus set and pressed the elegant forms of the cufic alphabet into their service with the happiest skill.[1]

For the composition of one of these figures of men or animals a large number of units was required, and in order that it might preserve its fidelity it was necessary not only that the separate pieces should exactly coincide but that they should be fixed and fitted with extreme nicety. At Babylon they were attached to the wall with bitumen. On the posterior surface of several enamelled bricks in the Louvre a thick coat of this substance may be seen; it has preserved an impression of all the roughnesses on the surface of the crude mass to which it was applied. It is impossible to decide whether this natural mortar was allowed to fill the joints between one enamelled square and another or not. None of these bricks have been found in place, and none, so far as we know, unbroken. The coat at the back may have rendered the adherence so complete that no further precaution was necessary. In Assyria, so far at least as Khorsabad is concerned, they were content with less trouble. The bricks forming the enamelled archivolt of which we have spoken are attached to the wall with a mortar in which there is but little adhesive power.[2] It offered no resistance when M. Place stripped the archway in order that he might enrich his own country with the spoils of Sargon. But for an accident that sent his boats to the bottom of the Tigris not far from Bassorah this beautiful gateway would have been rebuilt in Paris.[3]

To fit all these squares into their proper places was a delicate operation, but it was rendered easy by long practice. Signs, or rather numbers, for the guidance of the workmen, have been noticed upon the uncovered faces of the crude brick walls.[4] Still

[1] Two of these enamelled letters are in the Louvre. See also upon this subject, PLACE, *Ninive*, vol. ii. p. 86. I have also seen some in the collection of M. Piot.

[2] PLACE, *Ninive*, vol. i. p. 236.

[3] Only two rafts arrived at Bassorah; eight left Mossoul, so that only about a fourth of the antiquities collected reached their destination in safety. The cases with the objects despatched by the Babylonian mission, that is by MM. Fresnel, Oppert, and Thomas, were included in the same disaster. But for this the Assyrian collections of the Louvre would be less inferior than they are to those of the British Museum.

[4] PLACE, *Ninive*, vol. i. p. 253.

more skill was required for the proper distribution of a figure over the bricks by whose apposition it was to be created. No retouches were possible, because the bricks were painted before firing. The least negligence would be punished by the interruption of the contours, or by their malformation through a failure of junction between a line upon one brick and its continuation on the next. There was but one way to prevent such mistakes, and that was by preparing in advance what we should call a cartoon. On this the proposed design would be traced over a network of squares representing the junctions of the bricks. The bricks were then shaped, modelled, and numbered; each was painted according to the cartoon with its due proportion of ground or figure as the case might be, and marked with the same number as that on the corresponding square in the drawing.[1] The colour was laid separately on each brick; this is proved by the existence on their edges of pigment that has overflowed from the face and been fired at the same time as the rest.

Thus were manufactured those enamelled bricks upon which the modern visitor to the ruins of Babylon walks at every step. Broken, ground almost to powder as they are, they suffice to show how far the art of enamelling was pushed in those remote days, and how great an industry it must have been. We can have no doubt that colours fixed in the fire must have formed the chief element in the decoration of the buildings of Nebuchadnezzar, of that Babylon whose insolent prosperity so impressed the imagination and provoked the anger of the Jewish prophets. It was to paintings of this kind that Ezekiel alluded when he reproved Jerusalem under the name of Aholiba for its infidelity and its adoption of foreign superstitions: "For when she saw men portrayed upon the wall, the images of the Chaldæans portrayed with vermilion, girded with girdles upon their loins, exceeding in dyed attire upon their heads, all of them princes to look to, after the manner of the Babylonians of Chaldæa, the land of their nativity." [2]

[1] Place, *Ninive*, vol. ii. p. 253. These marks were recognized upon many fragments found at Babylon by MM. Oppert and Thomas (Oppert, *Expédition scientifique*, vol. i. pp. 143, 144). Loftus has transcribed and published a certain number of marks of the same kind which he found upon glazed bricks from the palace at Suza. These are sometimes cut in the brick with a point, sometimes painted with enamel like that on the face. (*Travels and Researches*, p. 398.)

[2] Ezekiel xxiii. 14, 15.

The "paintings in the temple of Belos," described by Berosus, were in all probability carried out in the same way. They decorated the walls of the great temple of Bel Merodach at Babylon, where "all kinds of marvellous monsters with the greatest variety in their forms" were to be seen.[1]

We see therefore, that both by sacred and profane writers is the important part played by these paintings in the palaces and temples of the capital affirmed. And Ctesias, who is not content with allusions, but enters into minute details, tells us how the work was executed, and how its durability was guaranteed. The modern buildings of Persia give us some idea as to the appearance of those of Babylon. No doubt the plan of a mosque differs entirely from that of a temple of Marduk or Nebo, but the principle of the decoration was the same. If the wand of an enchanter could restore the principal buildings of Babylon we should, perhaps, find more than one to which the following description of the great mosque of Ispahan might be applied with the change of a word here and there: "Every part of the building without exception is covered with enamelled bricks. Their ground is blue, upon which elegant flowers and sentences taken from the Koran are traced in white. The cupola is blue, decorated with shields and arabesques. One can hardly imagine the effect produced by such a building on an European accustomed to the dull uniformity of our colourless buildings; he is filled with an admiring surprise that no words can express."[2]

[1] BEROSUS, fragment i. § 4, in vol. ii. of the *Fragmenta historicum Græcorum* of Ch. MÜLLER.

[2] TEXIER, *Armenie et Perse*, vol. ii. p. 134. In the same work the details of the magnificent decoration upon the mosque of the Sunnites at Tauris (which afforded a model for that at Ispahan) will be found reproduced in their original colours. It is strange that this art of enamelled faïence, after being preserved so long, should so recently have become extinct in the East. "At the commencement of the last century," says M. TEXIER (vol. ii. p. 138), "the art of enamelling bricks was no less prosperous in Persia than in the time of Shah-Abbas, the builder of the great mosque at Ispahan (1587-1629); but now the art is completely extinct, and in spite of my desire to visit a factory where I might see the work in progress, there was not one to be found from one end of Ispahan to the other." According to the information I gathered in Asia Minor, it was also towards the beginning of the present century that the workshops of Nicæa and Nicomedia, in which the fine enamelled tiles on the mosques at Broussa were made, were finally closed. In these *fabriques* the plaques which have been found in such abundance for some twenty years past in Rhodes and other islands of the Archipelago were also manufactured. [The manufacture of these glazed tiles is by no means extinct in India, however.

If we should set about making such a comparison, the principal difference to be noticed would be that arising out of the prohibitions of the Koran. The Persian potter had to content himself with the resources of pure ornament, resources upon which he drew with an exquisite skill that forbids us to regret the absence of men and animals from his work. The coloured surfaces of the Babylonian buildings must have had more variety than those of the great mosque at Ispahan or the green mosque at Broussa. But the same groups and the same personages were constantly repeated in the same attitudes and tints, so that their general character must have been purely decorative. Even when they were combined into something approaching a scene, care was taken to guard, by conventionality of treatment and the frequent repetition of familiar types and groups, against its attracting to itself the attention that properly belonged to the composition of which it formed a part. The artist was chiefly occupied with the general effect. His aim was to give a certain rhythm to a succession of traditional forms whose order and arrangement never greatly varied, to fill the wide surfaces of his architecture with contrasts and harmonies of colour that should delight the eye and prevent its fatigue.

Were the colours as soft and harmonious as we now see them in those buildings of Persia and Asia Minor that will themselves soon be little more than ruins? It is difficult to answer this question from the very small fragments we possess of the coloured decorations of the Babylonian temples and palaces, but the conditions have remained the same; the wants to be satisfied and the processes employed a century ago were identical with those of Babylon and Nineveh; architect and painter were confronted by the same dazzling sun, and, so far as we can tell, taste has not sensibly changed over the whole of the vast extent of country that stretches

At many centres in Sindh and the Punjab, glazed tiles almost exactly similar to those on the mosque at Ispahan, so far as colours and ornamental motives are concerned, are made in great numbers and used for the same purposes as in Persia and ancient Mesopotamia. There is a tradition in India that the art was brought from China, through Persia, by the soldiers of Gingiz-Khan, but a study of the tiles themselves is enough to show that they are a survival from the art manufactures of Babylon and Nineveh. For detailed information on the history and processes used in the manufacture of these tiles, see Sir George Birdwood's *Industrial Arts of India*, part ii. pp. 304-310, 321, and 330; also Mr. Drury Fortnum's report on the Sindh pottery in the International Exhibition of 1871.—Ed.]

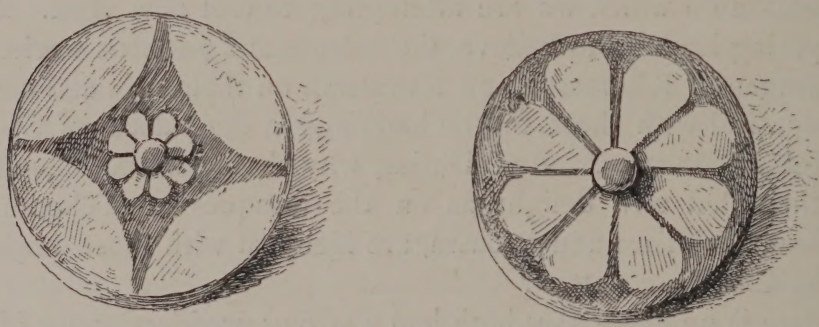
from the frontiers of Syria to the eastern boundaries of the plateau of Iran. New peoples, new religions, and new territorial divisions have been introduced, but industrial habits have remained; in spite of political revolutions the workman has transmitted the secrets of his trade to his sons and grandsons. Oriental art is now threatened with death at the hands of Western competition. Thanks to its machines Europe floods the most distant markets with productions cheaper than those turned out by the native workman, and the native workman, discouraged and doubtful of himself, turns to the clumsy imitation of the West, and loses his hold of the art he understood so well. Traditions have become greatly weakened during the last half century, but in the few places where they still preserve their old vitality they may surely be taken as representative of the arts and industries of many centuries ago, and as the lineal descendants of those early products of civilization on which we are attempting to cast new light. If, as everything leads us to believe, the colours and patterns worked by the women of Khorassan and Kurdistan on their rugs and carpets are identical with those on the hangings in the palaces of Sargon, of Nebuchadnezzar, and of Darius, why should we not allow that the tints that now delight us on the mosques of Teheran and Ispahan, of Nicæa and Broussa, are identical with those employed by the Chaldæan potter?

There is no doubt that both had a strong predilection for blue—for the marvellous colour that dyed the most beautiful flower of their fields, that glowed on their distant mountains, in their lakes, in the sea, and in the profound azure of an almost cloudless sky. Nature seems to have chosen blue for the background of her changing pictures, and like the artists of modern Persia those of antique Mesopotamia understood the value of the hint thus given. In the fragments of Babylonian tiles brought home by travellers blue is the dominant colour; and blue furnishes the background for those two compositions in enamelled brick that have been found *in situ*. The blue of Babylon seems however to have had more body and to have been darker in shade than that of the Khorsabad tiles.

We have already referred to this inferiority in the Assyrian enamel. It may be explained by the fact that the Assyrian architect looked to sculpture for his most sumptuous effects; he used polychromatic decoration only for subordinate parts of his

work, and he would therefore be contented with less careful execution than that required by his Babylonian rival. The glazed tiles of Assyria were not, as in Chaldæa, quasi bas-reliefs. Their tints were put on flat; the only exception to this being in the case of those rosettes that were made in such extraordinary numbers for use on the upper parts of walls and round doorways; in these the small central boss is modelled in low relief (see Figs. 121 and 122).

These glazed bricks were chiefly used by the Assyrian architect upon doorways and in their immediate neighbourhood.[1] M. Place found the decoration of one of the city gates at Khorsabad almost intact.[2] The enamel is laid upon one edge of the bricks, which are on the average three inches and a half thick. Figures are relieved in yellow, and rosettes in white against the blue ground.



Figs. 121, 122.—Rosettes in glazed pottery. Louvre.

A band of green marks the lower edge of the tiara.[3] The same motives and the same figures were repeated for the whole length of the band. The figures are winged genii in different postures of worship and sacrifice. They bear in their hands those metal seals and pine cones that we so often encounter in the bas-reliefs. Distributed about the entrance these genii seem to be the protectors of the city, they are beneficent images, their gesture is

[1] Sir H. Layard noticed this at the very beginning of his explorations: "Between the bulls and the lions forming the entrances in different parts of the palace were invariably found a large collection of baked bricks, elaborately painted with figures of animals and flowers, and with cuneiform characters" (*Nineveh*, vol. ii. p. 13).

[2] Place, *Ninive*, vol. i. p. 234; vol. iii. plates 9 and 17.

[3] *Ibid.*, vol. iii. plate 14. We should have reproduced this composition in colour had the size of our page allowed us to do so on a proper scale. M. Place was unable to give it all even in a double-page plate of his huge folio.

a prayer, a promise, a benediction. On each side of the arch, at its springing, there is one of greater stature than his companions (Fig. 123). His face is turned towards the vaulted passage. Upon the curve of the archivolt smaller figures face one another in couples; each couple is divided from its neighbours by rosettes (Fig. 124).

FIG. 123.—Detail of enamelled archivolt. Khorsabad. From Place.

The other composition is to be found on a plinth in the doorway of the harem at Khorsabad. This plinth was about twenty-three feet long, and rather more than three feet high. Its ornament was repeated on both sides of the doorway.[1] It consisted of a lion, an eagle, a bull, and a plough (Plate XV). Upon the returning angles the king appears, standing, on the one side with his head bare, on the other covered with a tiara. The back-

[1] PLACE, *Ninive*, vol. iii. plates 23-31

ground is blue, as in the city gates; green was only used for the leaves of the tree, in which some have recognized a fig-tree.

In these two examples the decoration is of an extreme simplicity; the figures are not engaged in any common action; there is, in fact, no picture. The artist sometimes appears to have been more ambitious. Thus Layard found at Nimroud the remains of a decoration in which the painter had apparently attempted to rival the sculptor: he had represented a battle scene analogous to those we find in such plenty in the bas-reliefs.[1] A similar motive may be found in a better preserved fragment belonging to the same structure

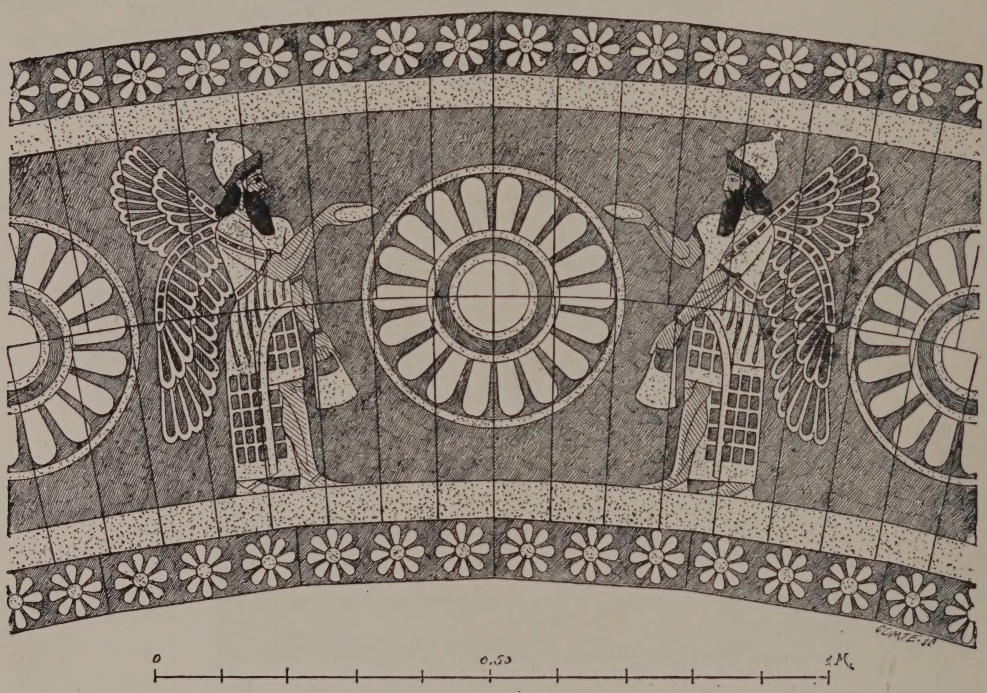


FIG. 124.—Detail from enamelled archivolt. Khorsabad. From Place.

(Plate XIV, Fig. 1).[2] A single brick bears four personages, a god, whose arms only are left, the king, his patera in hand, offering a libation, an eunuch with bow and quiver, and finally an officer with a lance. George Smith also found a fragment of the same kind at Nimroud (see Fig. 125). It shows the figure of a soldier, from the knees upwards, armed with bow and lance, and standing

[1] LAYARD, *Monuments*, 2nd series, plates 53, 54. Elsewhere (*Discoveries*, pp. 166-168) Layard has given a catalogue and summary description of all these fragments, of which only a part were reproduced in the plates of his great collection.

[2] *Ibid.* plate 55.

by the wheel of a chariot. Above his head are the remains of an inscription which must have been continued on the next brick. The word *warriors* may still be deciphered.[1] This figure may have formed part of some attempt on the part of the decorator to narrate in colour some of the exploits of the king for whom the palace was built.

There is a difference between such fragments as this and the glazed tiles of the Khorsabad gates. In the latter the enamelled edges of several bricks were required to make a single figure. In the bricks from Nimroud on the other hand, whole figures are

FIG. 125.—Enamelled brick in the British Museum.

painted on their surface, and in fact a single brick had several figures upon it which were, therefore, on a much smaller scale. A decoration in which figures were some two and three feet high, was well suited for use in lofty situations where those restricted to the surface of a single brick would have been hardly visible. The latter must, then, have been fixed on the lower parts of the wall, but as none of them have yet been found in place we cannot say positively that it was so.

Such representations were, moreover, quite exceptional. Most

[1] GEO. SMITH, *Assyrian Discoveries*, p. 79.

of the pieces of glazed brick that have been found in the ruins show nothing but the remains of figures and motives ornamental rather than historical in their general character.[1] Besides the rosettes of which we have had occasion to speak so often we encounter at every step a spiral ornament the design of which remains without much modification, while a certain variety is given to its general effect by changing the arrangement of its colours. In the example reproduced in Fig. 126 large black disks, like eyes, are embraced by a double spiral in which blue and yellow alternate.[2]

There is one curious class of glazed tiles in which this motive continually reappears. These tiles are thinner than the ordinary brick. Their shape is sometimes square but with their sides slightly concave (Fig. 127), sometimes circular, in the form of a quoit (Fig. 128). In each case similar designs are employed, flowers, palmettes, &c. These are carried out in black upon a white ground

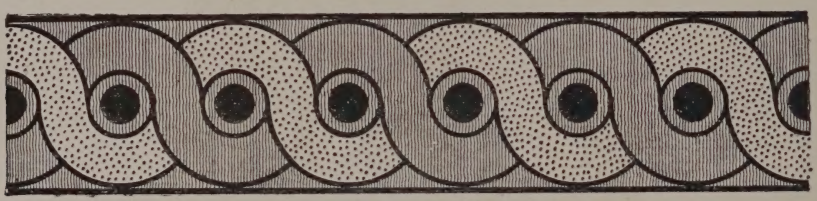


Fig. 126.—Ornament upon enamelled brick. British Museum.

and arranged symmetrically about a round hole in the middle of the tile. These things must have been manufactured for some special purpose, and the name of Assurnazirpal, that may be read upon our first fragment (Fig. 127), shows that they belonged to some great work of decoration whose main object was to glorify the name of that sovereign. It has been guessed that they formed centres for a coffred ceiling, and there is nothing to negative the conjecture. The opening in the centre may have been filled with a boss of bronze or silver gilt. As we have already shown, appliqué work of this kind played a great part in Assyrian decoration;

[1] Botta gives examples of some of these bricks (*Monument de Ninive*, plates 155, 156). Among the motives there reproduced there is one that we have already seen in the bas-reliefs (fig. 67). It is a goat standing in the collected attitude he would take on a point of rock. The head of the ibex is also a not uncommon motive (Layard, *Monuments*, first series, plate 87, fig. 2; see also Botta).

[2] Fig. 1 of our Plate XIV. reproduces the same design, but with a more simple coloration.

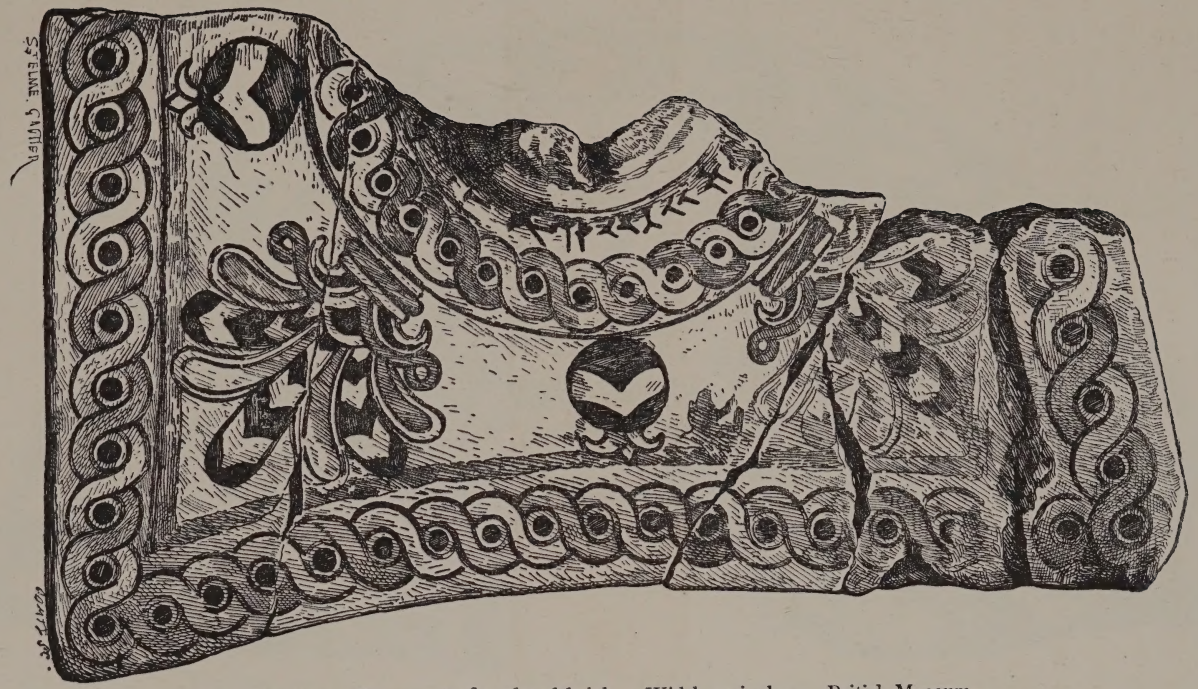


FIG. 127.—Fragment of a glazed brick. Width 14 inches. British Museum.

FIG. 128.—Fragment of a glazed brick. Diameter 17 inches. British Museum.

doors were covered with it and there are many signs that both in Chaldæa and Assyria many other surfaces were protected in the same fashion.

After the careful examination of its ruins Taylor came to the conclusion that the upper story of a staged tower at Abou-Sharein had gilt walls. He found a great number of small and very thin gold plates upon the plateau that formed the summit of the building, and with them the gilded nails with which they had been fixed.[1] In his life of *Apollonius of Tyana*, Philostratus gives a description of Babylon that appears taken from authentic sources, and he notices this employment of metal. "The palaces of the King of Babylon are covered with bronze which makes them glitter at a distance; the chambers of the women, the chambers of the men and the porticoes are decorated with silver, with beaten and even with massive gold instead of pictures.[2] Herodotus speaks of the silvered and gilded battlements of Ecbatana[3] and at Khorsabad cedar masts incased in gilded bronze were found,[4] while traces of gold have been found on some crude bricks at Nimroud.[5] Seeing that metal was thus used to cover wide surfaces, and that, as we shall have occasion to show, the forms of sculpture, of furniture, and of the arts allied to them in Mesopotamia, prove that the inhabitants of that region were singularly skilled in the manipulation of metal, whether with the chisel or the hammer, the above conjecture may very well be true; the sheen of the polished surface would be in excellent harmony with the enamelled faïence about it.

It has been suggested that some of the carved ivories may

[1] J. E. TAYLOR, *Notes on Abou-Sharein*, p. 407 (in the *Journal of the Royal Asiatic Society*, vol. xv.).

[2] PHILOSTRATUS, *Life of Apollonius*, i. 25. Cf. DIONYSIUS PERIEGETES, who says of Semiramis (v. 1007, 1008):

> αὐτὰρ ἐπ' ἀκροπόληι μέγαν δόμον εἵσατο Βήλῳ
> χρυσῷ τ' ἠδ' ἐλέφαντι καὶ ἀγύρῳ ἀσκήσασα.

[3] HERODOTUS, i. 98.

[4] See above, p. 202.

[5] LAYARD, *Nineveh*, vol. ii. p. 264, note 1. Frequent allusions to this use of metal are to be found in the wedges. In M. LENORMANT'S translation of the London inscription (*Histoire ancienne*, vol. ii. p. 233, 3rd edition) in which Nebuchadnezzar enumerates the great works he had done at Borsippa, I find the following words: "I have covered the roof of Nebo's place of repose with gold. The beams of the door before the oracles have been overlaid with silver . . . . . the pivot of the door into the woman's chamber I have covered with silver."

have been used to ornament the coffers. This suggestion in itself seems specious enough, but I failed to discover a single ivory in the rich collection of the British Museum whose shape would have fitted the openings in the tiles.[1] It is certain, however, that ivory was used in the ornamentation of buildings. "I incrusted," says Nebuchadnezzar, "the door-posts, the lintel, and threshold of the place of repose with ivory." The small rectangular plaques with which several cases and many drawers are filled in the British Museum may very well have been used for the decoration of doors, and the panels of ceilings and wainscots. They were so numerous, especially in the palace of Assurnazirpal at Nimroud, that we cannot believe them all to have come off small and movable pieces of furniture. We are confirmed in this idea by the fact that none of these ivories are unique or isolated works of art. In spite of the care and taste expended on their execution they were in no sense gems treasured for their rarity and value; they were the products of an active manufactory delivering its types in series, we might almost say in dozens. The more elegant and finished among them are represented three, four, and five times over in the select case in the British Museum. We may safely say that the examples preserved of any one model are by no means all that were made; in fact, in the drawers in which the smaller fragments are preserved, we noticed the remains of more than one piece which had once been similar to the more perfect specimens exhibited to the public.

Thus there are in the Museum four replicas of the little work shown in our Fig. 129.[2] The head of a woman, full face, and with an Egyptian head-dress, is enframed in a narrow window and looks over a balcony formed of columns with the curious capitals already noticed on page 211. Beside these four more or less complete examples, the Museum possesses several detached heads (Fig. 130) which once, no doubt, belonged to similar compositions.

[1] Among the fragments of tiles brought from Nimroud by Mr. George Smith, and now in the British Museum, there are two like those reproduced above, to which bosses or knobs of the same material—glazed earthenware—are attached. The necks of these bosses are pierced with holes apparently to receive the chain of a hanging lamp, and are surrounded at their base with inscriptions of Assurnazirpal stating that they formed part of the decoration of a temple at Calah.—Ed.

[2] The size of our engraving is slightly above that of the object itself.

The beauty of the ivory surface was often enhanced by the insertion of coloured enamels and lapis-lazuli in the hollows of

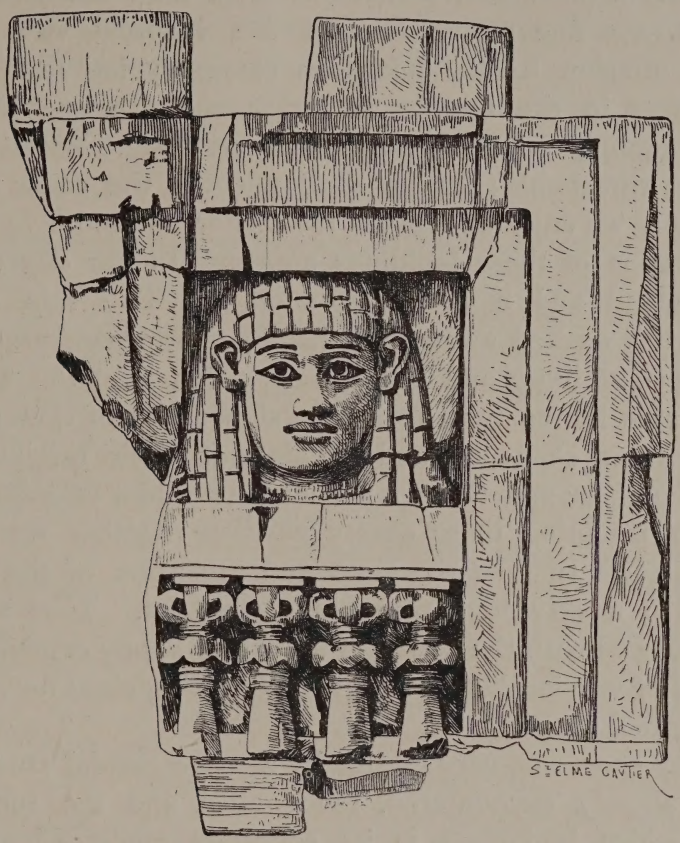


FIG. 129.—Ivory tablet in the British Museum. Drawn by Saint-Elme Gautier.

the tablet. Traces of this inlay may be seen on many of the Museum ivories, especially on those recently brought from Van, in Armenia. The tablets also show traces of gilding.

FIG. 130.—Fragment of an ivory tablet.

All this proves that the Mesopotamian decorator had no contemptible resources for the ornamentation of his panelled

walls and coffered ceilings. These chiselled, enamelled, and gilded ivories must have been set in frames of cedar or cypress. The Assyrian texts bear witness in more than one place to the use of those fine materials, and the Hebrew writers make frequent allusion to the luxurious carpentry imitated by their own princes in the temple at Jerusalem.[1] In one of his invectives against Nineveh Zephaniah cries: "Desolation shall be in the thresholds: for he shall uncover the cedar work."[2]

The more we enter into detail the richer and more varied does the decoration of these buildings appear. In our day the great ruins are sad and monotonous enough. The rain of many centuries has washed away their paint; their ornaments of metal and faïence, of ivory and cedar, have fallen from the walls; the hand of man has combined with the slow action of time to reduce them to their elements, and nothing of their original beauty remains but here and there a fragment or a hint of colour. And yet when we bring these scanty vestiges together we find that enough is left to give the taste and invention of the Assyrian ornamentist a very high place in our respect. That artist was richly endowed with the power of inventing happy combinations of lines, and of varying his motives without losing sight for an instant of his original theme.

We may show this very clearly by a more careful study of two motives already encountered, the rosette, and the running ornament which is known in its countless modifications as the "knop and flower pattern." These two motives are united in those great thresholds which have been found now and then in such marvellous preservation. They also occur in certain bas-reliefs representing architectural decorations, so that we are in possession of all the documents required for the formation of a true idea of their varied beauties. In the Assyrian Basement Room of the British Museum there is a fine slab of gypsum of which we reproduce one corner in our Fig. 131.[3] Besides the daisy shaped

[1] 1 *Kings* vi. 15; vii. 3. [2] Zephaniah ii. 14.

[3] The design consists entirely in the symmetrical repetition of the details here given. [In this engraving the actual design of the pavement has been somewhat simplified. Between the knop and flower that forms the outer border and the rosettes there is a band of ornament consisting of the symmetrical repetition of the palmette motive with rudimentary volutes, much as it occurs round the outside of the tree of life figured on page 213. In another detail our cut differs slightly from

rosette which is so conspicuous, there is one of more elaborate design which we reproduce on a larger scale and from another example in our Fig. 132. It is inclosed in a square frame adorned with chevrons. This frame with the rosette it incloses may be taken as giving some idea of the ceiling panels or coffers.

In this rosette it should be noticed that beyond the double festoon about the central star appears the same alternation of bud

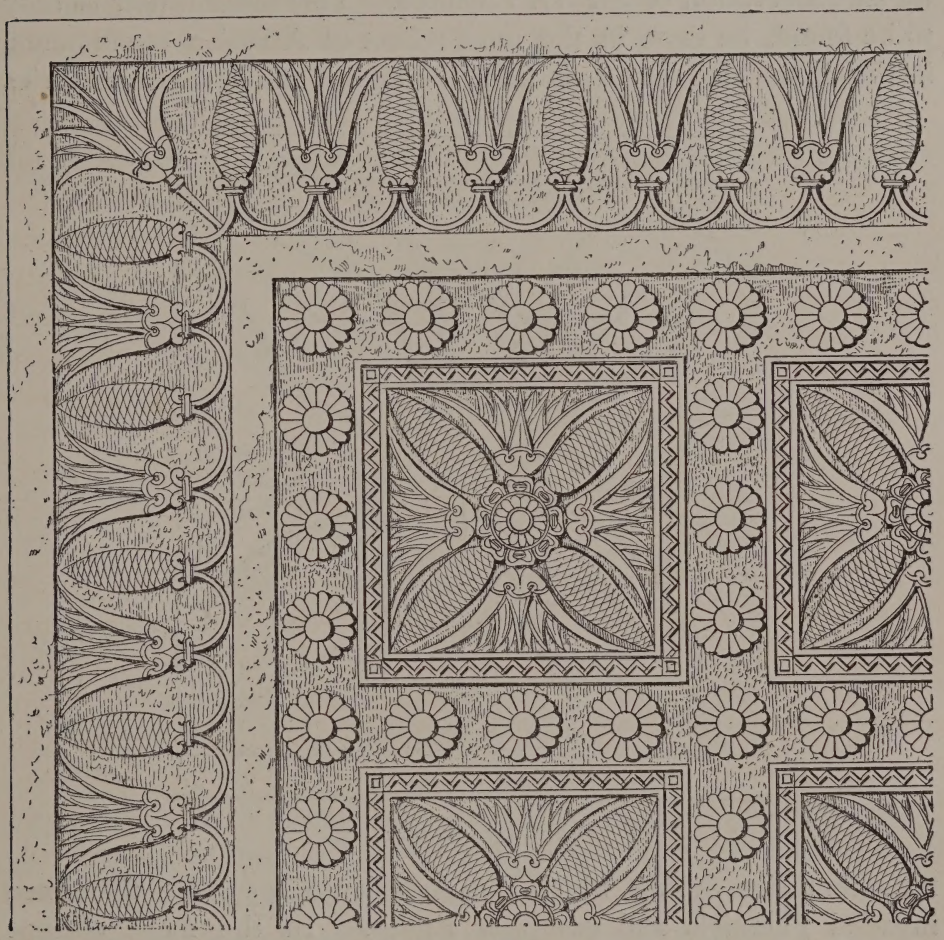


FIG. 131.—Threshold from Kouyundjik. From Layard.

and flower as in the straight border. That flower has been recognized as the Egyptian lotus, but Layard believes its type to have been furnished, perhaps, by a scarlet tulip which is very common towards the beginning of spring in Mesopotamia.[1] We

the original. In the latter there is no corner piece; the border runs entirely across the end, and the side borders are stopped against it.—ED.]

[1] LAYARD, *Discoveries*, p. 184, note.

ourselves believe rather in the imitation of a motive from the stuffs, the jewels, the furniture, and the pottery that Mesopotamia drew from Egypt at a very early date through the intermediary of the Phœnicians. The Phœnicians themselves appropriated the same motive and introduced it with their own manufactures not only into Mesopotamia but into every country washed by the Mediterranean. Our conjecture is to some extent confirmed by an observation of Sir H. Layard's. This lotus flower is only to be found, he says, in the most recent of Assyrian monuments, in those, namely, that date from the eighth and seventh centuries

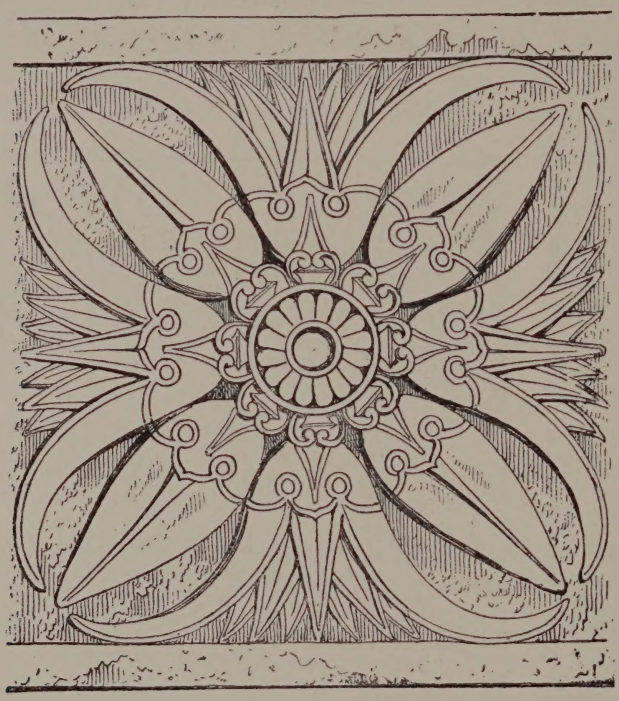


Fig. 132.—Rosette.

B.C., centuries during which the Assyrian kings more than once invaded Phœnicia and occupied Egypt.[1] In the more ancient bas-reliefs flowers with a very different aspect—copied in all probability directly from nature—are alone to be found. Of these some idea may be formed from the adjoining cut. It reproduces a bouquet held in the hand of a winged genius in the palace of Assurnazirpal (Fig. 133).

The lotus flower is to be found moreover in monuments much older than those of the Sargonids, but that does not in any way

[1] Layard, *Nineveh*, vol. ii. p. 212, note.

disprove the hypothesis of a direct plagiarism. The commercial relations between the valleys of the Nile and the Euphrates date from a much more remote epoch, and about the commencement of the eighteenth dynasty the Egyptians seem to have occupied in force the basin of the Khabour, the principal affluent of the Euphrates. Layard found many traces of their passage over and sojourn in that district, among them a series of scarabs, many of which bore the superscription of Thothmes III.[1] So that the points of contact were numerous enough, and the mutual intercourse sufficiently intimate and prolonged, to account for the assimilation by Mesopotamian artists of a motive taken from the flora of Egypt and to be seen on almost every object imported from the

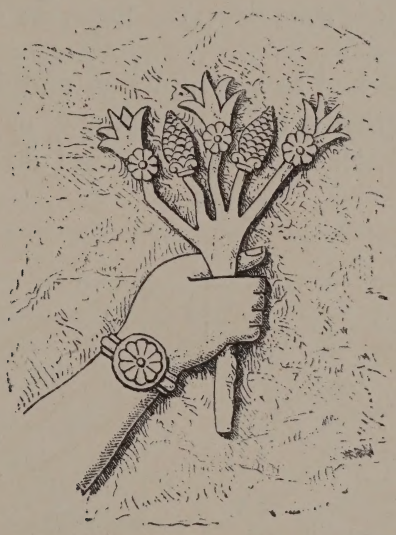


FIG. 133.—Bouquet of flowers and buds; from Layard.

Nile valley. This imitation appears all the more probable as in the paintings of Theban tombs dating from a much more remote period than the oldest Ninevite remains, the pattern with its alternate bud and flower is complete. Many examples may be found in the plates of Prisse d'Avennes' great work;[2] one is reproduced in our Fig. 134.

The Assyrians borrowed their motive from Egypt, but they gave it more than Egyptian perfection. They gave it the definitive shapes that even Greece did not disdain to copy. In the Egyptian

[1] LAYARD, *Discoveries*, p. 281.

[2] PRISSE D'AVENNES, *Histoire de l'Art égyptien d'après les Monuments* (2 vols folio): see the plates entitled *Couronnements et Frises fleuronnés*.

frieze the cones and flowers are disjointed; their isolation is unsatisfactory both to the eye and the reason. In the Assyrian

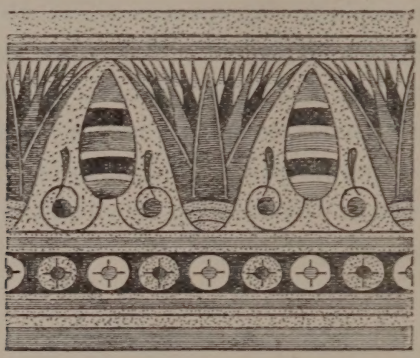


Fig. 134.—Painted border; from Thebes, after Prisse.

pattern they are attached to a continuous undulating stem whose sinuous lines add greatly to the elegance of the composition. The distinctive characters of the bud and flower are also very

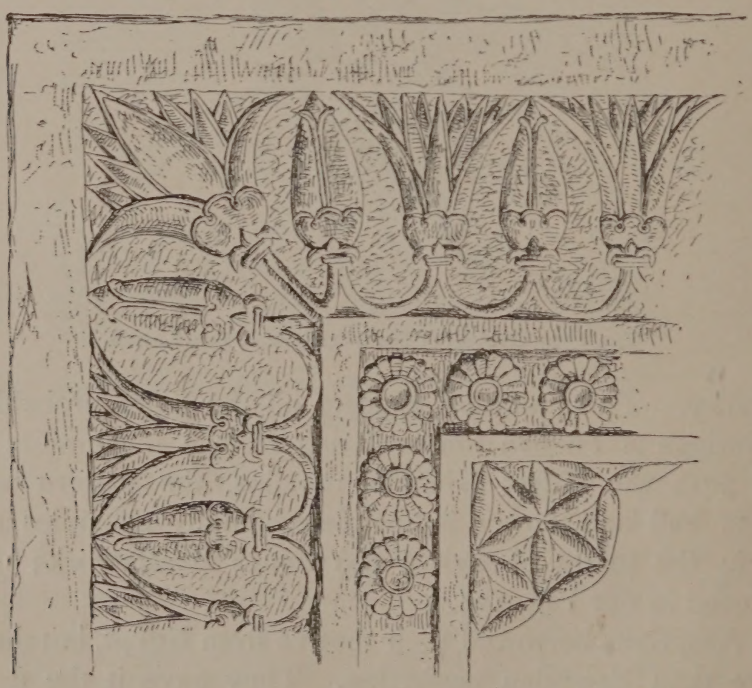


Fig. 135.—Fragment of a threshold; from Khorsabad. Louvre. Drawn by Bourgoin.

well marked by the Assyrian artists. The closed petals of the one the open ones of the other and the divisions of the calix are

indicated in a fashion that happily combines truth with convention. In our Fig. 135 we reproduce, on a larger scale, a part of the slab already illustrated at page 240, so that the merits of its workmanship may be better appreciated.

The painter also made use of this motive. In a bas-relief from the palace of Assurbanipal we find the round-headed doorway illustrated in Fig. 136. Its rich decoration must have been carried out in glazed bricks, similar to those discovered by M. Place on one of the gates of Khorsabad. Here, however, the figures of supernatural beings are replaced by rosettes and by two lines of the knop and flower ornament.

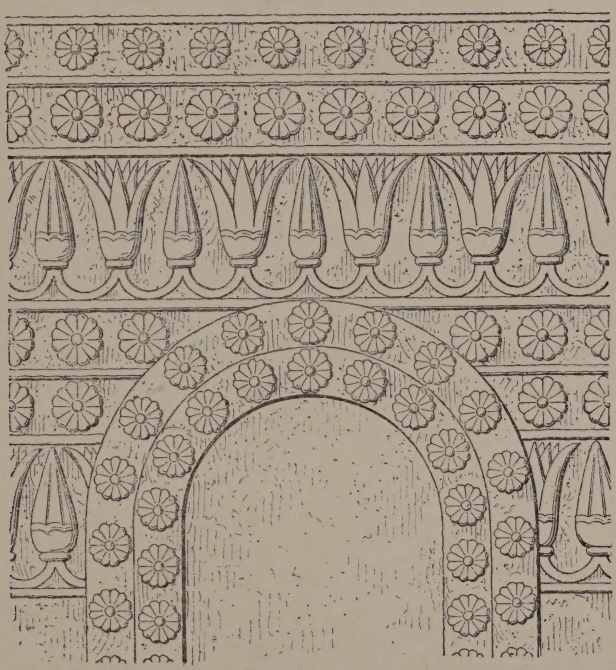


FIG. 136.—Door ornament; rom Kouyundjik. After Rawlinson.

Vegetable forms brought luck to the Assyrian decorator. Even after taking a motive from a foreign style of ornament he understood, so to speak, how to naturalize a plant and to make its forms expressive of his own individuality. Our only difficulty is to make a choice among the numerous illustrations of his inventive fertility; we shall confine ourselve to reproducing the designs embroidered upon the royal robes of Assurnazirpal. We need hardly say that these robes do not now exist, but the Ninevite sculptor copied them in soft alabaster with an infinite

patience that does him honour. He has preserved for us every detail with the exception of colour. The lotus is not to be found in this embroidery; its place is taken by the palmette or tuft of leaves (Fig. 137), through which appear stems bending with the weight of the buds they bear. Animals, real and imaginary, are

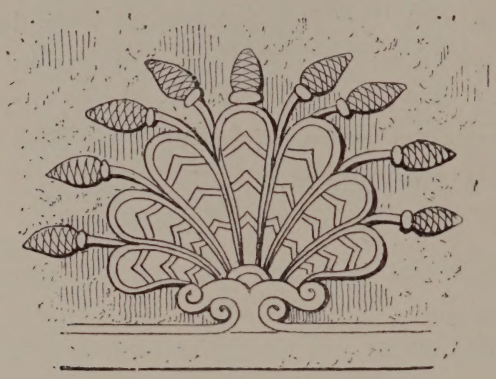


Fig. 137.—Palmette; from Layard.

skilfully mingled with the fan-shaped palmettes; in one place we find two goats (Fig. 138), in another two winged bulls (Fig. 139). Bulls and goats are both alike on their knees before the palmette, which seems to suggest that the latter is an abridged representation of that sacred tree which we have already encountered and will encounter again in the bas-reliefs, where it is surrounded by scenes of

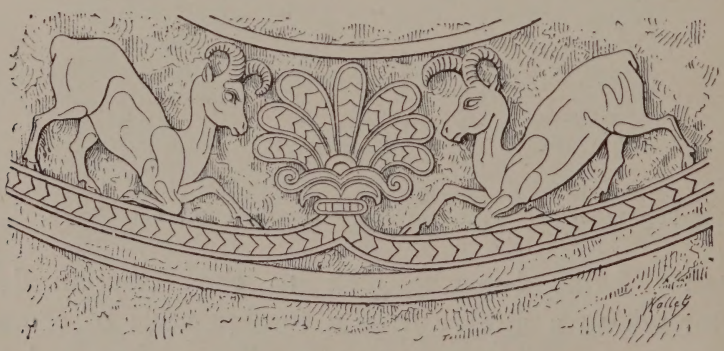


Fig. 138.—Goats and palmette; from Layard.

adoration and sacrifice. This motive has the double advantage of awakening religious feeling in the spectators, and of provoking a momentary elegance of line and movement in the two pairs of animals. On the other hand we can hardly explain the motive represented in our Figs. 140 and 141—a motive already met with

in the figured architecture of the bas-reliefs and in the glazed tiles—by anything but an artistic caprice. In some cases the rosette and the palmette are introduced in a single picture (142).

We have ventured to supplement the scanty remains of architectural decoration by these illustrations from another art, because all Babylonian ornament, whether for carpets, hangings, or draperies, for works in beaten metal, in paint or enamelled faience, is governed by the same spirit and marked by the same taste. In every form impressed upon matter by the ancient inhabitants of Mesopotamia the same symbols, the same types, and the same motives are repeated to infinity. The examples we have brought together suffice to show the principal characteristics of that decoration. It had doubtless one great

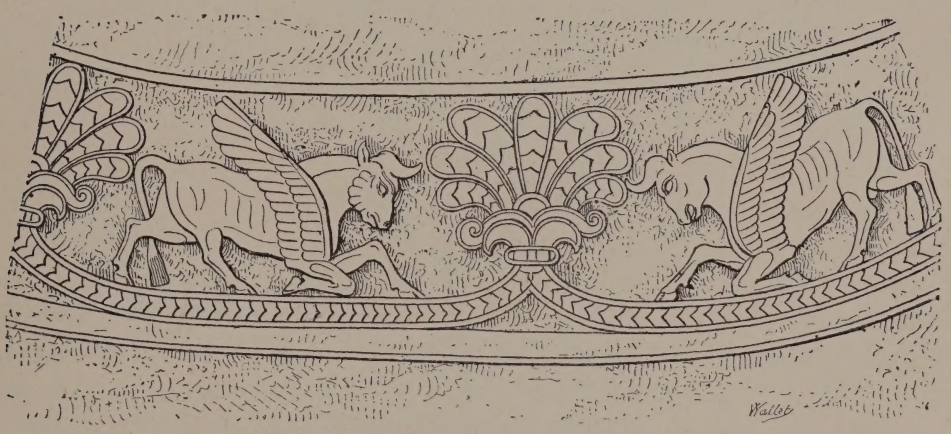


FIG. 139.—Winged bulls and palmette; from Layard.

defect, it was too easily separated from the building to which it belonged; it was fragile, apt to fall, and therefore unlikely to have any very long duration. But the architect was not to blame for that. The defect in question was consequent on the poverty of the material with which he had to work. Given the conditions under which he laboured, and we cannot deny that he showed great skill in making the best of them. He understood how to contrast wide unbroken surfaces with certain important parts of his *ensemble*, such as cornices, plinths, and especially doorways. Upon these he concentrated the efforts of the painter and sculptor; upon these he lavished all the hues of the Assyrian palette, and embellished them with the carved figures of men and gods, of kings and genii, of all

the countless multitudes who had fought and died for Assyria and its divine protector, the unconquered and unconquerable Assur.

If, not content with this general view of Assyrian decoration, we enter into it in detail, we shall find its economy most judiciously arranged and understood. When the sculptor set himself to carve the slabs that enframe a door or those that protect the lower parts of a wall, he sought to render what he

Fig. 140.—Stag upon a palmette; from Layard.

saw or imagined as precisely and definitely as possible. He went to nature for inspiration even when he carved imaginary beings, and copied her, in fragments perhaps, but with a loyal and vigorous sincerity. Everywhere, except in certain pictures with a strictly limited function, he obeyed an imagination over which a sure judgment kept unsleeping watch. His polychromatic decorations fulfilled their purpose of amusing and delighting the eye without ever attempting to deceive it. Such is and must always be the true principle of ornament, and the

decorators of the great buildings of Babylon and Nineveh seem to have thoroughly understood that it was so; their rich and

FIG. 141.—Winged bull upon a rosette; from Layard.

fertile fancy is governed, in every instance to which we can point, with unfailing tact, and to them must be given the credit of having invented not a few of the motives that may yet be traced in the art of the Medes and Persians, in that of the Syrians, the Phœnicians, the peoples of Asia Minor, and above all in that of the Greeks—those unrivalled masters who gave immortality to every artistic combination that they chose to adopt.

FIG. 142.—Stag, palmette, and rosette; from Layard.

§ 8. *On the Orientation of Buildings and Foundation Ceremonies.*

The inhabitants of Mesopotamia were so much impressed by celestial phenomena, and believed so firmly in the influence of the stars over human destiny, that they were sure to establish some connection between those heavenly bodies and the arrange-

ment of their edifices. All the buildings of Chaldæa and Assyria are orientated; the principle is everywhere observed, but it is not always understood in the same fashion.

Mesopotamian buildings were always rectangular and often square on plan, and it is sometimes the angles and sometimes the centres of each face that are directed to the four cardinal points. It will easily be understood that the former system was generally preferred. The façades were of such extent that their direction to a certain point of the horizon was not evident, while salient angles, on the other hand, had all the precision of an astronomical calculation; and this the earliest architects of the Chaldees thoroughly understood. Some of the buildings examined by Loftus and Taylor on

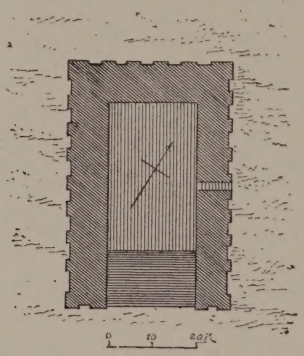


Fig. 143.—Plan of a temple at Mugheir; from Loftus.

the lower Euphrates may have been restored, more or less, by Nebuchadnezzar and his successors, but it is generally acknowledged that the lower and less easily injured parts of most of these buildings date from the very beginnings of that civilization, and were constructed by the princes of the early empire. Now both at Warka and at Mugheir one corner of a building is always turned towards the true north.[1] An instance of this may be given in the little building at Mugheir in which the lower parts of a temple have been recognized (Fig. 143). The same arrangement is to be found in the palace excavated by M. de Sarzec at Tello.[2]

Most of the Assyrian architects did likewise. See for example the plan of Sargon's city, Dour-Saryoukin (Fig. 144). Its circumvallation incloses an almost exact square, the diagonals of

[1] Loftus, *Travels and Researches*, p. 171.

[2] *Les Fouilles de Chaldée, communication d'une Lettre de M. de Sarzec par M. Léon Heuzey*, § 2 (*Revue archéologique*, November, 1881).

which point to the north, south, east and west respectively.[1] In the large scale plans that we shall give farther on of the palace

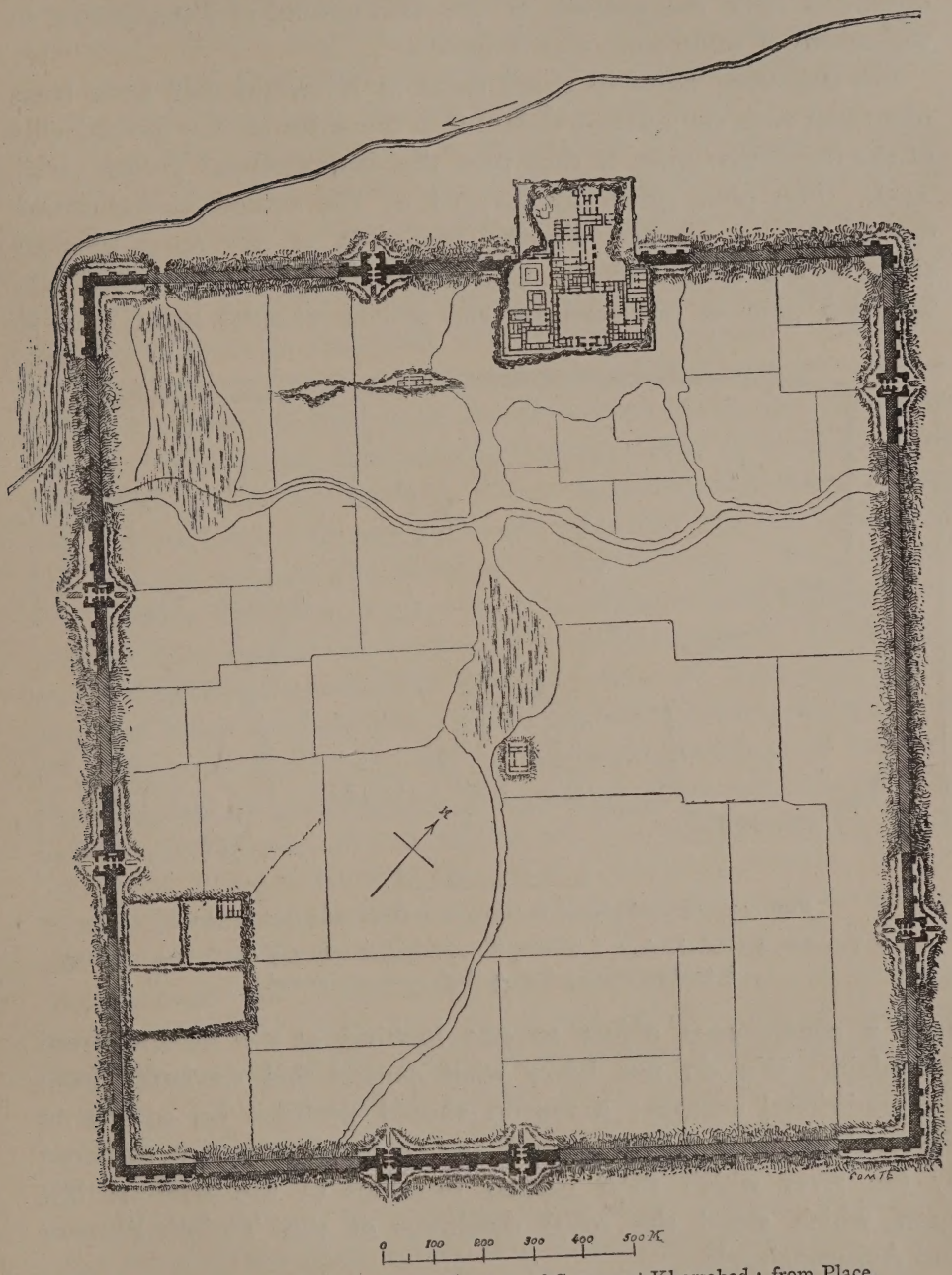


FIG. 144.—Plan of the town and palace of Sargon at Khorsabad ; from Place.

and of some of its parts it will be seen that the parallelograms of

[1] PLACE, *Ninive*, vol. i. pp. 17, 18. BOTTA had previously made the same observation (*Monument de Ninive*, vol. v. p. 25).

which that building was composed also had their angles turned to the four cardinal points. It was the same with the structures sprinkled over the summit of the vast mound of Kouyundjik, in the centre of what once was Nineveh.

On the other hand in those ruins at Nimroud that have been identified with the ancient Calah, it is the sides of the mound and of the buildings upon it that face the four cardinal points (Fig. 145). The plan given by Layard of the square staged tower disengaged in his last digging campaign at the north-western angle of the mound shows this more clearly.[1] Nearly half the northern side is occupied by the salient circular mass that is

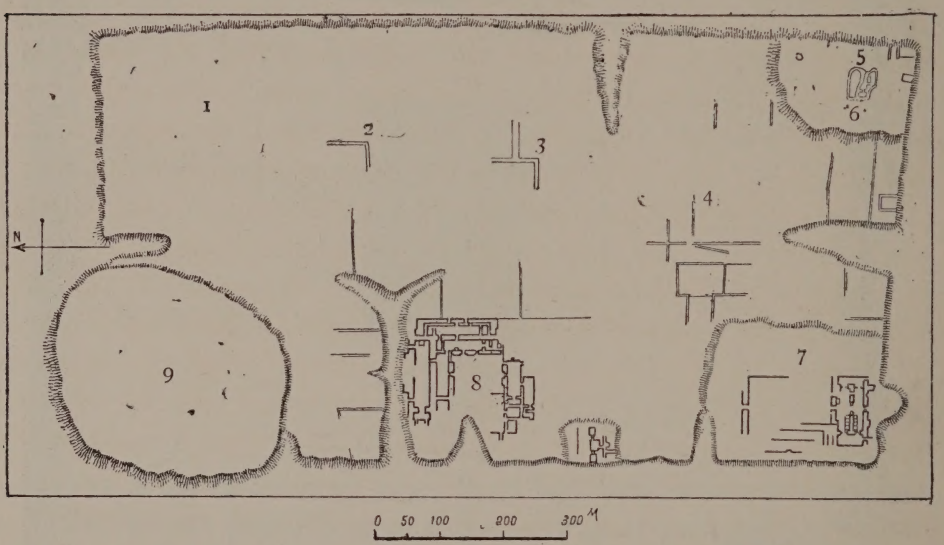


FIG. 145.—General plan of the remains at Nimroud ; from Layard.

1, 2, 3 Trenches, 4 Central palace, 5 Tombs, 6 South-eastern edifice, 7 South-western palace, 8 North-western palace, 9 High pyramidal mound.

such a conspicuous object to one looking at the mound from the plain. We do not know what caused this deviation from the traditional custom ; a reason should perhaps be sought in the configuration of the ground, and in the course here followed by the river which then bathed the foot of the artificial hill upon which stood the royal dwellings of the Tiglath-Pilesers and Assurnazirpals.

The first of these two methods of orientation had the advantage of establishing a more exact and well defined relation between the disposition of the building and those celestial points to which

[1] LAYARD, *Discoveries*, plan 2, p. 123

a peculiar importance was attached. It must also be remembered that such an arrangement gave a more agreeable dwelling than the other. No façade being turned directly to the north there was none entirely deprived of sunlight, while at the same time there was none that faced due south. The sun as it ran its daily course would light for a time each face in turn.

The religious ideas that led to orientation are revealed in other details, in the time chosen for commencing the foundations of temples or palaces, and in certain rites that were accomplished afterwards—doubtless with the help of the priesthood—in order to place the building under the protection of the gods and to interest them in its duration. There were ceremonies analogous to those now practised when we lay foundation stones. In the Chaldee system the first stone, the seed from which the rest of the edifice was to spring, was an angle stone, under or in which were deposited inscribed plaques. These contained the name of the founder, together with prayers to the gods and imprecations on all who should menace the stability of the building. This custom dated from the very beginning of Chaldæan civilization, as is proved by a curious text translated by M. Oppert.[1] It was discovered at Sippara and dates from the time of Nabounid, one of the last kings of Babylon. Many centuries before the reign of that prince a temple raised to the sun by Sagaraktyas, of the first dynasty, had been destroyed, and its foundations were traditionally said to inclose the sacred tablets of Xisouthros, who has been identified with the Noah of the Bible. Nabounid recounts the unsuccessful efforts that had been made before his time to recover possession of the precious deposit. Two kings of Babylon, Kourigalzou and Nebuchadnezzar, and one king of Assyria, Esarhaddon, had made the attempt and failed. One of the three had commemorated his failure in an inscription to the following effect: "I have searched for the angle stone of the temple of Ulbar but I have not found it." Finally Nabounid took up the quest. After one check caused by an inundation he renewed the search with ardour; he employed his army upon it, and at last, after digging to a great depth, he came to the angle-stone: "Thus," he says, "have I recovered the name and date of Sagaraktyas."

In the ruins of the ancient royal city recovered by M. de Sarzec at Tello the traces of similar precautions have everywhere been

[1] OPPERT, *Expédition scientifique de Mésopotamie*, vol. i. p. 273.

found. In the middle of the great mass of ruins whose plan we are still awaiting, "I found," says M. de Sarzec, "at a depth of hardly 30 centimetres (one foot English) below the original level of the soil four cubical masses consisting of large bricks cemented with bitumen, and measuring about 80 centimetres across each face. In the centre of each cube there was a cavity 27 centimetres long by 12 wide and 35 deep. In each case this hollow contained a small bronze statuette packed, as it were, in an impalpable dust. In one cavity the statuette was that of a kneeling man (Fig. 146), in another of a standing woman (Fig. 147), in another of a bull

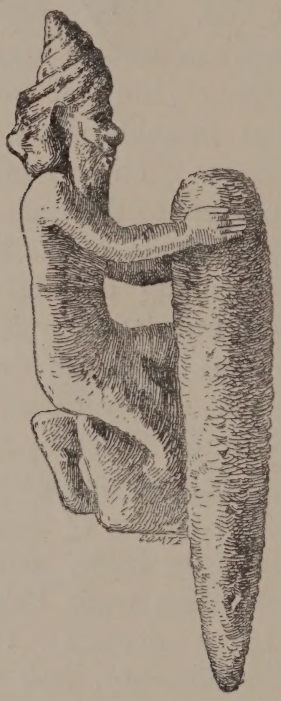


Fig. 146.—Bronze statuette. 8¼ inches high. Louvre.

(Fig. 148). At the feet of each statue there were two stone tablets, set in most cases in the bitumen with which the cavity was lined. One of these tablets was black, the other white. It was upon the black as a rule that a cuneiform inscription similar, or nearly so, to the inscriptions on the statuettes was found."[1]

Abridgments of the same commemorative and devotional form of words are found upon those cones of terra-cotta that were

[1] *Les Fouilles de Chaldée, communication d'une Lettre de M. de Sarzec*, by M. Léon Heuzey (*Revue archéologique*, November, 1881).

discovered in such numbers among the foundations and in the interstices of the structure (Fig. 149).[1]

The Mesopotamian builder was not satisfied with relying upon talismans built into the lower part of a building or strewn under the pavements. Taylor ascertained at Mugheir and Loftus at Sinkara that engraved cylinders were built into the four angles of the upper stories. A brick had been omitted, leaving a small niche in which they were set up on end.[2] Profiting by the hint thus given Sir Henry Rawlinson excavated the angles of one of the terraces of the Birs-Nimroud at Babylon, and to the astonishment of his workmen he found the terra-cotta cylinders upon which the reconstruction of the temple by Nebuchadnezzar is narrated exactly at the point where he told them to dig.[3] These

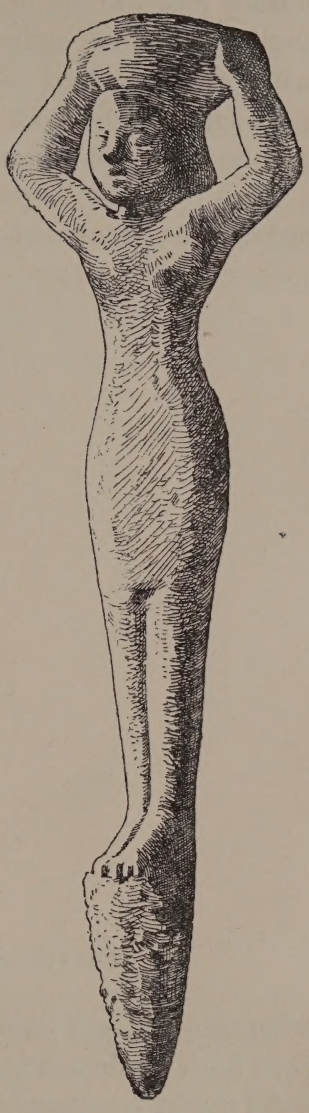


FIG. 147.—Bronze statuette. 8¼ inches high. Louvre.

[1] As to the notions attached to these cones, whether sprinkled about the foundations of a building, set up in certain sanctuaries, or carried upon the person, an article published by M. LEDRAIN, *àpropos* of an agate cone recently added to the collections of the Louvre, may be read with advantage. Its full title is *Une Page de Mythologie sémitique* (*la Philosophie positive, Revue*, 14th year, 1882, pp. 209-213).

[2] TAYLOR, *Notes on the Ruins of Mugeyr* (*Journal*, &c. vol. xv.; pp. 263, 264). LOFTUS, *Travels*, &c. p. 247.

[3] See the *Athenæum* for January 20, 1855 (No. 1421), p. 84. "After two months' excavation Colonel Rawlinson was summoned to the work by the information that . . . a wall had been found and laid bare to a distance of 190 feet, and that it turned off at right angles at each end, to be apparently carried all round the mound, forming a square of about twenty-seven feet in height, surmounted by a platform. He immediately rode to the excavation, examined the spot, where he found the workmen quite discouraged and hopeless, having laboured long and found nothing. He was now, however, well aware of these facts, and at once pointed out the spot, near the corner, where the bricks should be removed. In half an hour a small hollow was found, from which he immediately directed the head workman to 'bring out the

little tubs are called cylinders—a not very happy title. As some of them are about three feet high (Fig. 150) they can take commemorative inscriptions of vastly greater length than those cut upon small hard-stone cylinders. Some of these inscriptions have as many as a hundred lines very finely engraved. Many precious specimens dating from the times of Nebuchadnezzar and his successors have been found in the ruins of Babylon.[1]

Thus from the beginning to the end of Chaldæan civilization the custom was preserved of consecrating a building by hiding in its

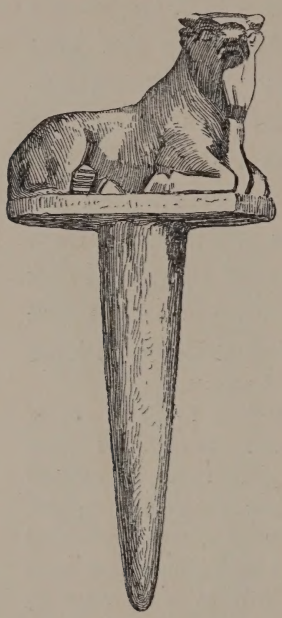


FIG. 148.—Bronze statuette. 10 inches high. Louvre.

substance objects to which a divine type and an engraved text gave both a talismanic and a commemorative value.

As might be supposed the same usage was followed in Assyria.

commemorative cylinder'—a command which, to the wonder and bewilderment of the people, was immediately obeyed; and a cylinder covered with inscriptions was drawn out from its hiding-place of twenty-four centuries, as fresh as when deposited there by the hands, probably, of Nebuchadnezzar himself! The Colonel added in a note that the fame of his magical power had flown to Bagdad, and that he was besieged with applications for the loan of his wonderful instrument to be used in the discovery of hidden treasures!"

[1] Among these we may mention the Philips cylinder, from which, in speaking of the great works carried out by Nebuchadnezzar, LENORMANT gives long extracts in his *Manuel d'Histoire ancienne*, vol. ii. pp. 233 and 235.

In the palace of Assurnazirpal at Nimroud, Sir Henry Layard found some alabaster tablets with inscriptions on both their faces hidden behind the colossal lions at one of the doorways.[1] The British Museum also possesses a series of small figures found at Nimroud but in a comparatively modern building, the palace of Esarhaddon. They have each two pairs of wings, one pair raised, the other depressed. They had been strewn in the sand under the threshold of one of the doors.

It was at Khorsabad, however, that the observations were made which have most clearly shown the importance attached to this ceremony of consecration. M. Oppert tells us that during the summer of 1854, "M. Place disinterred from the foundations of

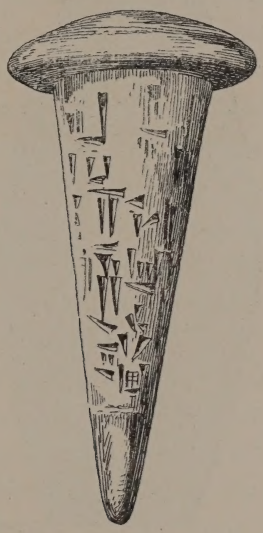


FIG. 149.—Terra-cotta cone. Height 6 inches. Louvre.

Khorsabad a stone case in which were five inscriptions on five different materials, gold, silver, antimony, copper and lead. Of these five tablets he brought away four. The leaden one was too heavy to be carried off at once, and it was despatched to Bassorah on the rafts with the bulk of the collection, whose fate it shared." The other four tablets are in the Louvre. Their text is almost indentical. M. Oppert gives a translation of it.[2] According to his rendering, the inscription—in which the king speaks throughout in the first person—ends with this imprecation: "May the great lord Assur destroy from the face of this country the name

[1] LAYARD, *Nineveh*, vol. i. p. 115, and vol. ii. p. 91.

[2] OPPERT, *Expédition en Mésopotamie*, vol. ii. pp. 343-351.

and race of him who shall injure the works of my hand, or who shall carry off my treasure!"

A little higher up, where Sargon recounts the founding of the palace, occurs a phrase which M. Oppert translates: "The people threw their amulets." What Sargon meant by this the excavations of M. Place have shown. In the foundations of the town walls, and especially in the beds of sand between the bases of the sculptured bulls that guard the doorways, he found hundreds of small objects, such as cylinders, cones, and terra-cotta statuettes. The most curious of these are now deposited in the Louvre. The numbers and the character of these things prove that a great

FIG. 150.—Terra-cotta cylinder. One-third of actual size; from Place.

number of the people must have assisted at the ceremony of consecration.

Several of these amulets were not without value either for their material or their workmanship, but the great majority were of the roughest kind, some being merely shells or stones with a hole through them, which must have belonged to the poorest class of the community. In many cases their proper use could be easily divined; the holes with which they were pierced and other marks of wear showed them to be personal amulets.[1] Those present at the ceremony of consecrating the foundations

[1] PLACE, *Ninive*, vol. i. p. 188.

must have detached them from the cords by which they were suspended, and thrown them, upon the utterance of some propitiatory formula by the priests, into the sand about to be covered with the first large slabs of alabaster.

The terra-cotta cylinders were in no less frequent use in Assyria than in Chaldæa. M. Place found no less than fourteen still in place in niches of the harem walls at Khorsabad. The long inscription they bore contained circumstantial details of the construction of both town and palace. Like that on the metal tablets, it ended with a malediction on all who should dare to raise their hands against the work of Sargon.[1]

As for the cylinders hidden in each angle of a building, none, we believe, have as yet been found in Assyria; perhaps because no search or an inefficient search has been made for them.

We have dwelt at some length upon the orientation of buildings, upon the importance attached to their angle stones, and upon the precautions taken to place an edifice under the protection of the gods, and to preserve the name of its founder from oblivion. We can point to no stronger evidence than that furnished by these proceedings as a whole, of the high civilization to which the people of Chaldæa and Assyria had attained at a very early date. The temple and palace did not spread themselves out upon the soil at the word of a capricious and individual fancy; a constant will governed the arrangement of its plan, solemn rites inaugurated its construction and recommended its welfare to the gods. The texts tell us nothing about the architects, who raised so many noble monuments; we know neither their names, nor their social condition, but we can divine from their works that they had strongly established traditions, and that they could look back upon a solid and careful education for their profession. As to whether they formed one of those close corporations in which the secrets of a trade are handed down from generation to generation of their members, or whether they belonged to the sacerdotal caste, we do not know. We are inclined to the latter supposition in some degree by the profoundly religious character of the ceremonies that accompanied the inception of a building, and by the accounts left by the ancients of those priests whom they called *the Chaldæans*. It was to these Chaldæans that Mesopotamian society owed all it knew of scientific methods and modes of

[1] OPPERT, *Expédition scientifique*, vol. i. pp. 354 *et seq.*

thought, and it is, perhaps, fair to suppose that they turned to the practice of the arts those intellects which they had cultivated above their fellows. Architecture especially requires something more than manual skill, practice, and natural genius. When it is carried so far as it was in Chaldæa it demands a certain amount of science, and the priests who by right of their intellectual superiority held such an important place in the state, may well have contrived to gain a monopoly as architects to the king. In their persons alone would the scientific knowledge required for such work be combined with the power to accomplish those sacred rites which gave to the commencement of a new building the character of a contract between man and his deity.

§ 9. *Mechanical Resources.*

The Chaldæans and Assyrians were never called upon to transport such enormous masses as some of the Egyptian monoliths, such as the obelisks and the two great colossi at Thebes. But the stone bulls that decorated the palaces of Nineveh were no light weight, and it was not without difficulty that the modern explorers succeeded in conveying them to the borders of the Tigris and loading them on the rafts upon which they began their long journeys to Paris and London. In moving such objects from place to place the Assyrians, like the Egyptians, had no secret beyond that of patience, and the unflinching use of human arms and shoulders in unstinted number.[1] We know this from monuments in which the details of the operation are figured even more clearly and with more pictorial power than in the bas-relief at El-Bercheh, which has served to make us acquainted with the methods employed in taking an Egyptian colossus from the quarry to its site.

In Mesopotamia, as in Egypt, there were water-ways that could be used at any season for the transport of heavy masses. Quarries were made as near the banks of the Euphrates and Tigris as possible, and when a stone monster had to be carried to a town situated at some distance from both those rivers the canals by which the country was intersected in every direction supplied their

[1] As to the simplicity of Egyptian engineering, see the *History of Art in Ancient Egypt*, vol. ii. p. 72, and fig. 43.

place. Going down stream, and especially in flood time, no means of propulsion were required; the course of the boats or rafts was directed by means of heavy oars like those still used by the boatmen who navigate the Tigris in *keleks*, or rafts, supported on inflated hides; in ascending the streams towing was called into play, as we know from one of the Kouyundjik bas-reliefs.[1] In this the stone in course of transport is oblong in shape and is placed upon a wide flat boat, beyond which it extends both at the stern and the bows. It is securely fastened with pieces of wood held together by strong pins. There are three tow ropes, two fastened to the stone itself and the third to the bow of the boat.

The towers pull upon these cables by means of smaller cords passed round the shoulders of each and spliced to the main ropes; by such means they could bring far more weight to bear than if they had been content to hold the cable in their hands, as in Egypt. The bas-relief in question is mutilated, but we may guess that a hundred men were attached to each cable, which would make three hundred in all obeying the single will of the superintending engineer who is perched upon the stone and directing their movements. On each flank of the gang march overseers armed with swords and rattans that would be quick to descend on the back and loins of any shirker.

More than one instance of such punishment may be seen on the bas-relief reproduced in part in our Fig. 151. In its lower division two or three of these slave-drivers may be seen with their hands raised against the workmen; in one case the latter sinks to the ground beneath the blows rained upon him. The way in which the whole series of operations is represented in this Kouyundjik relief is most curious. High up in the field we often find the king himself, standing in his chariot and urging on the work. The whole occupies several of Layard's large plates. We can only reproduce the central group, which is the most interesting to the student of engineering in ancient Mesopotamia.

The block of alabaster that we saw a moment ago on a boat towed by hundreds of human arms has been delivered to the sculptors and has put on, under their hands, the rough form of a mitred, human-headed bull. It will be completed after being put in place; the last touches of the chisel and the brush will then be

[1] See LAYARD, *Monuments*, 2nd series, plate ii. The same author gives a detailed description of this picture in his *Discoveries*, pp. 104-106.

given to it; but the heaviest part of the work is already done and the block has lost much of its original size and weight. Firmly packed with timber, the bull lies upon its side upon a sledge which is curved in front like a boat, or a modern sleigh. Two cables are

Fig. 151.—The transport of a bull. Height of the slab, 7 feet 3 inches; British Museum.

fastened to its prow and two to its stern. The engineer is again seated upon the stone and claps his hands to give the time, but now he is accompanied by three soldiers who appear to support his authority by voice and gesture. In order to prevent friction and to facilitate the movement of the sledge, rollers are

thrust beneath its runners as they progress. Before the huge mass will start, however, the straining cords and muscles have to be helped by a thrust from behind. This is given by means of a huge lever, upon which a number of men pull with all their weight, while its curved foot is engaged under the sledge. A workman is occupied with the reinforcement of the fulcrum by thrusting a wedge in between its upper surface and the lower edge of the lever. When everything is ready a signal will be given, the men behind will throw their weight upon the lever, the sledge will rise a little, the ropes will strain and tighten, and the heavy mass will glide forward upon the greased rollers until arms and legs give out and an interval for rest is called, to be followed presently by a repetition of the same process. Every precaution is taken to minimize the effect of any accident that may take place in the course of the operation. Behind the sledge spare ropes and levers are carried, some upon men's backs, others on small hand-carts. There are also a number of workmen carrying rollers.

We shall only refer to one more of these reliefs and that the one with which the series appears to close (Fig. 152). This carved picture has been thought, not without reason, to represent the erection of the bull[1] in its destined place. After its slow but uninterrupted march the huge monster has arrived upon the plateau where it has been awaited. By one great final effort it has been dragged up an inclined plane to the summit of the mound and has been set upon its feet. Nothing remains to be done but to pull and thrust it into its place against the doorway it has to guard and ornament. The same sledge, the same rollers, the same lever, the same precautions against accident are to be recognized here as in the last picture. The only difference is in the position of the statue itself. Standing upright like this it is much more liable to injury than when prone on its flank. New safeguards have therefore been introduced. It is packed under its belly with squares of wood and inclosed in scaffolding to prevent dangerous vibration. Additional precautions against this latter danger are provided by gangs of men who walk at each side and hold, some ropes fastened to the uprights of the scaffolding, others long forked poles engaged under its horizontal pieces. By these means equilibrium could be restored after any extra oscillation on the part of the sledge and its burden.

[1] LAYARD, *Discoveries*, p. 112.

All these manœuvres are remarkable for the skill and prodigality with which human strength was employed; of all the scientific tools invented to economise effort and to shorten the duration of a task, the only one they seem ever to have used was the most simple of all, the lever, an instrument that must have been invented over and over again wherever men tried to lift masses of stone or wood from the ground. Its discovery must, in fact, have taken place long before the commencement of what we call civilization, although its theory was first expounded by the Greek mathematicians.

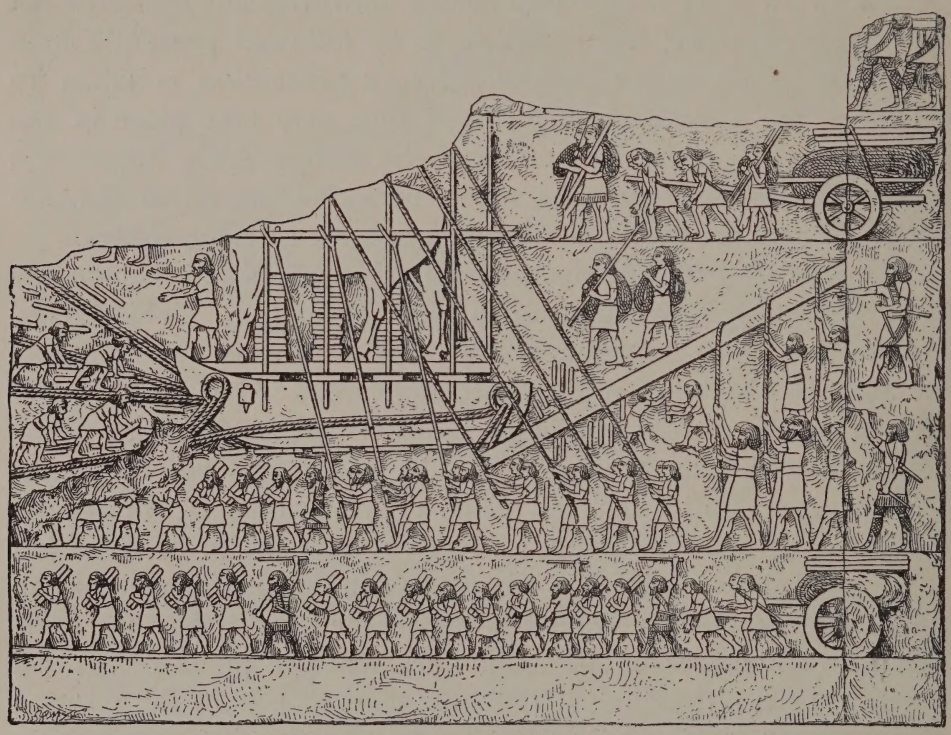


Fig. 152.—Putting a bull in place; from Layard.

In a relief in the palace of Assurnazirpal at Nimroud, there is a pulley exactly similar to those often seen over a modern well.[1] A cord runs over it and supports a bucket. There is no evidence that the Assyrians employed such a contrivance for any purpose but the raising of water. We cannot say that they used it to lift heavy weights, but the fact that they understood its principle puts them slightly above the Egyptians as engineers.

[1] Layard, *Nineveh*, vol. ii. p. 32.

§ 10. *On the Graphic Processes Employed in the Representations of Buildings.*

The Chaldæans and Assyrians knew as little of perspective as they did of mechanics. When they had to figure a building and its contents, or a landscape background, they could not resist the temptation of combining many things which could not be seen from a single standpoint. Like the painters and sculptors of Thebes they mixed up in the most naïve fashion those graphic processes that we keep carefully apart. All that they cared about was to be understood. We need not here reproduce the observations we made on this subject in the corresponding chapter of Egyptian Art;[1] it will suffice to give a few examples of the simultaneous employment by Ninevite sculptors of contradictory systems.

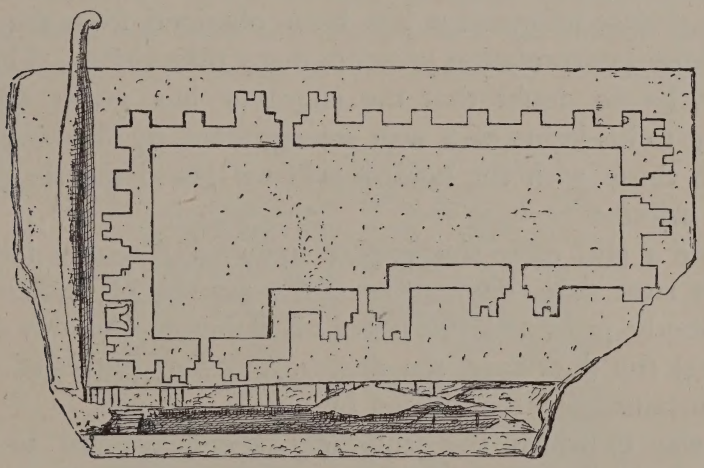


FIG. 153.—Chaldæan plan. Louvre.

It is not difficult to cite examples of things that may, with some little ingenuity, be brought within the definition of a plan. The most curious and strongly marked of these is furnished by one of the most ancient monuments that have come down to us; we mean a statue found at Tello in Lower Chaldæa by M. de Sarzec. It represents a personage seated and holding on his knees an engraved tablet on which two or three different things are represented (Fig. 153). On the right there is one of those styles with which letters or images

[1] *Art in Ancient Egypt*, vol. ii. chapter i. § 1.

were cut in the soft clay, at the bottom of the tablet there is a scale which we know from another monument of the same kind to have been originally 10·8 inches in length, *i.e.* the Babylonian half-cubit or span. By far the larger part of the field, however, is occupied by an irregular figure in which the trace of a fortified wall may be easily recognised. When these monuments were first brought to France this statue was supposed to be that of an architect. When the inscriptions were interpreted, however, this opinion had to be modified in some degree. They were found to contain the same royal title as the other figure of similar style and material discovered by M. de Sarzec on the same spot, the title, namely, of the individual whom archæologists have at present agreed to call Gudea.[1] It therefore seems to represent that prince in the character of an architect, as the constructor of the building in which his statues were placed as a sacred deposit. Must we take it to be the plan of his royal city as a whole, or only of his palace? It is difficult to answer this question, especially while no precise information has been obtained from the inscriptions, whose interpretation presents many difficulties. There can, however, be no doubt that the engraver has given us a plan according to his lights of a wall strengthened by flanking towers, of which those with the boldest salience guard the six passages into the interior.

We find a still more simple plan upon an Assyrian monument of much later date, namely, upon the armour of beaten bronze that formerly protected the gates of Balawat. In this example (Fig. 154) the doorways, the angles, and the centres of the two longer curtains are strengthened by towers.

The way in which the sculptor has endeavoured to suggest the crenellations shows that these plans are not drawn on the same principal as ours; there is no section taken at the junction

[1] M. J. Halévy disputes this reading of the word. As we are unable to discuss the question, we must refer our readers to his observations (*Les Monuments Chaldéens et la Question de Sumir et d'Accad*) in the *Comptes rendus de l'Académie des Inscriptions*, 1882, p. 107. M. Halévy believes it should be read as the name of the prince Nabou or Nebo. The question is only of secondary importance, but M. Halévy enlarges its scope by reopening the whole matter of debate between himself and M. Oppert as to the true character of what Assyriologists call the Sumerian language and written character. The *Comptes rendus* only gives a summary of the paper. The same volume contains a *résumé* of M. Oppert's reply (1882, p. 123: *Inscriptions de Gudéa*, et seq).

with the soil or at a determined height; the draughtsman in all probability wished to give an idea of the height of the flanking towers. His representation is an ideal *projection*

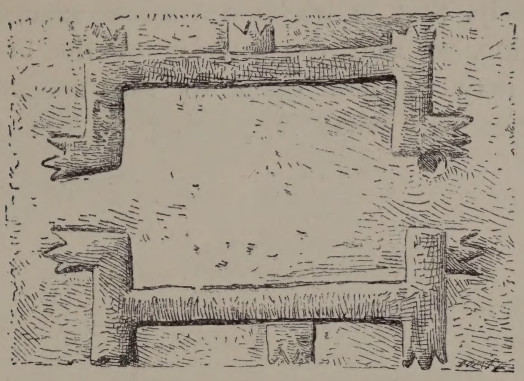


FIG. 154.—Assyrian plan; from the Balawat gates in the British Museum.

similar to those of which we find so many examples in Egypt, only that here we have the towers laid flat outside the fortification to which they belong in such a fashion that their summits

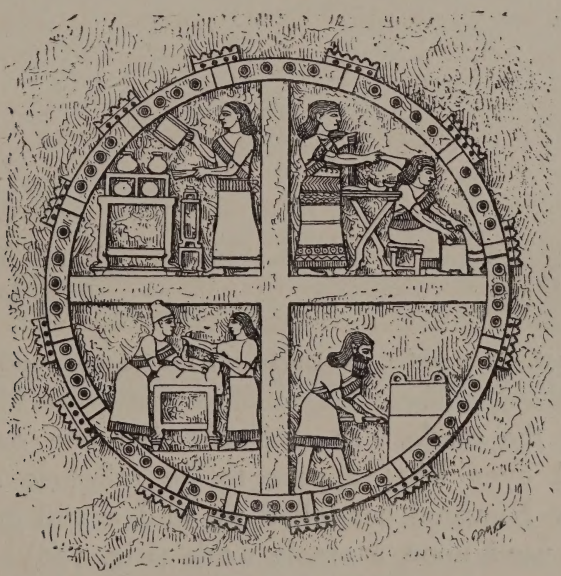


FIG. 155.—Plan and section of a fortress; from Layard.

are as far as possible from the centre of the structure. We shall see this better in another plan of the same kind in which the details are more carefully made out (Fig. 155). It

comes from a bas-relief, on which a circular fortress, divided into four equal parts by walls radiating from its centre, is portrayed.

In this relief we find another favourite process of the Egyptians employed, namely, that in which a vertical section is combined with a projection, so that the interior of the building and its arrangements may be laid open to the spectator. In this instance we can see what is passing in the four principal

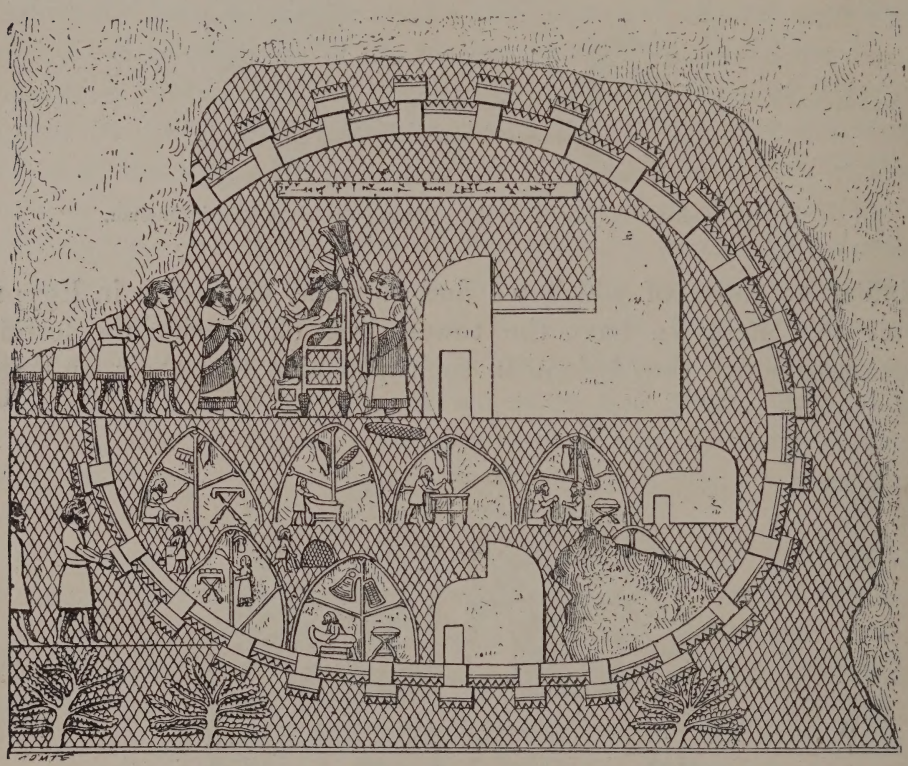


Fig. 156.—Plan, section, and elevation of a fortified city; from Layard.

chambers of the castle. In each chamber one or two persons are occupied over what appear to be religious rites.

In another Nimroud bas-relief we find a still greater variety of processes used upon a single work (Fig. 156). The picture shows the king enthroned in the centre of a fortified city which he has just captured. Prisoners are being brought before him; his victorious troops have erected their tents in the city itself. Beside these tents three houses of unequal size represent the dwellings of the conquered. The *enceinte* with

its towers is projected on the soil in the fashion above noticed; a longitudinal section lays bare the interiors of the tents and shows us the soldiers at their various occupations. As for the houses, they are represented by their principal façades, which are drawn in elevation.

FIG. 157.—Plan and elevation of a fortified city; from Layard.

When he had to deal with more complicated images, as in the reliefs at Kouyundjik representing the conquests and expeditions of Assurbanipal, the artist modified his processes at will so as to combine in the narrow space at his disposal all the information that he thought fit to give. See for instance the relief in which the Assyrians celebrate their capture of Madaktu, an important city of Susiana, by a sort of triumph (Fig. 157).

The town itself, with its towered walls and its suburbs in which every house is sheltered by a date tree, is figured in the centre. At the top and sides the walls are projected outwards from the city; at the bottom they are thrown inwards in order, no doubt, to leave room for the tops of the date trees. Moreover, the sculptor had to find room for a large building on the right of his fortification. This is, apparently, the palace of the king. Guarded by a barbican and surrounded by trees it rises upon its artficial mound some little distance in front of the city. The artist also wished to show that palace and city were protected by a winding river teeming with fish, into which fell a narrower stream in the neighbourhood of the palace. If he had projected the walls of the palace and its barbican in the same way as those of the other buildings he would either have had to encroach upon his streams and to hide their junction or to divert their course. In order to avoid this he made use of several points of view, and laid his two chief structures on the ground in such a fashion that they form an oblique angle with the rest of the buildings. The result thus obtained looks strange to us, but it fulfilled his purpose; it gave a clear idea of how the various buildings were situated with respect to each other and it reproduced with fidelity the topographical features of the conquered country.

The chief desire of the sculptor was to be understood. That governing thought can nowhere be more clearly traced than in one of the reliefs dealing with the exploits of Sennacherib.[1] Here he had to explain that in order to penetrate into a mountainous country like Armenia, the king had been compelled to follow the bed of a torrent between high wooded banks. In the middle of the picture we see the king in his chariot, followed by horsemen and foot soldiers marching in the water. Towards the summit of the relief, the heights that overhang the stream are represented by the usual network. But how to represent the wooded mountains on this side of the water? The artist has readily solved the question, according to his lights, by showing the near mountains and their trees upside down, a solution which is quite on all fours, in principle, with the plans above described. The hills are projected on each side of the line made by the torrent, so that it runs along their bases, as it does in fact; but

[1] Layard, *Discoveries*, p. 341.

in this case the topsy-turviness of the trees and hills has a very startling effect. The intentions of the artist, however, are perfectly obvious; his process is childish, but it is quite clear.

None of these plans or pictures have, any more than those of Egypt, a scale by which the proportions of the objects introduced can be judged. The men, who were more important in the eye of the artist than the buildings, are always taller than the houses and towers. This will be seen still more clearly in the figure we reproduce from the Balawat gates (Fig. 158). It represents a fortress besieged by Shalmaneser II., three people stand upon the roof of the building; if we restore their lower limbs we shall see that their height is equal to that of the castle itself.[1]

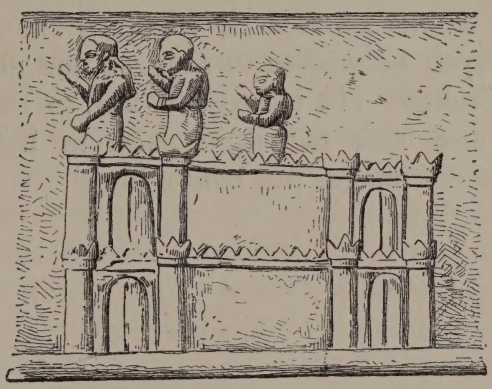


FIG. 158.—Fortress with its defenders; from the Balawat gates.

This short examination of the spirit and principles of Assyrian figuration was necessary in order to prevent embarrassment and doubt in speaking of the architectural designs and other things of the same kind that we may find reproduced in the bas-reliefs. Unless we had thoroughly understood the system of which the sculptors made use, we should have been unable to base our restorations upon their works in any important degree; and, besides, if there be one touchstone more sure than another by which we may determine the plastic genius of a people, it is the ingenuity, or the want of it, shown in the contrivance of means to make lines represent the thickness of bodies and the distances of various planes. In this matter Chaldæa and Assyria remained, like Egypt, in the infancy of art. They were even excelled by

[1] The same disproportion between men and buildings is to be found in many other reliefs (see figs. 39, 43, and 60).

the Egyptians, who showed more taste and continuity in the management of their processes than their Eastern rivals. Nothing so absurd is to be found in the sculptures of the Nile valley as these hills and trees turned upside down, and we shall presently see that a like superiority is shown in the way figures are brought together in the bas-reliefs. In our second volume on Egyptian art we drew attention to some Theban sculptures in which a vague suspicion of the true laws of perspective seemed to be struggling to light. The attempt to apply them to the composition of certain groups was real, though timid. Nothing of the kind is to be found in Assyrian sculpture. The Mesopotamian artist never seems for a moment to have doubted the virtues of his own method, a method which consisted in placing the numerous figures, whose position in a space of more or less depth he wished to suggest, one above another on the field of his relief. He trusted, in fact, to the intelligence of the spectator, and took but little pains to help the latter in making sense of the images put before him.

CHAPTER III.

FUNERARY ARCHITECTURE.

§ 1. *Chaldæan and Assyrian Notions as to a Future Life.*

Of the remains that have come down to us from ancient Egypt the oldest, the most important in some respects, and beyond dispute the most numerous, are the sepulchres. Of the two lives of the Egyptian, that of which we know the most is his posthumous life—the life he led in the shadows of that carefully-hidden subterranean dwelling that he called his "good abode." While in every other country bodies after a few years are nothing but a few handfuls of dust, in Egypt they creep out in thousands to the light of day, from grottoes in the flanks of the mountains, from pits sunk through the desert sand and from hollows in the sand itself. They rise accompanied by long inscriptions that speak for them, and make us sharers in their joys and sorrows, in their religious beliefs and in the promises in which they placed their hopes when their eyes were about to close for ever. A peculiarity of which Egypt offers the only instance is thus explained. The house of the Memphite citizen and the palace of the king himself, can only now be restored by hints culled from the reliefs and inscriptions—hints which sometimes lend themselves to more than one interpretation, while the tombs of Egypt are known to us in every detail of structure and arrangement. In more than one instance they have come down to us with their equipment of epitaphs and inscribed prayers, of pictures carved and painted on the walls and all the luxury of their sepulchral furniture, exactly in fact as they were left when their doors were shut upon their silent tenants so many centuries ago.[1]

[1] See *Art in Ancient Egypt*, vol. i. chapter 3.

We are far indeed from being able to say this of Assyria and Chaldæa. In those countries it is the palace, the habitation of the sovereign, that has survived in the best condition, and from it we may imagine what the houses of private people were like; but we know hardly anything of their tombs. Chaldæan tombs have been discovered in these latter years, but they are anonymous and mute. We do not possess a single funerary inscription dating from the days when the two nations who divided Mesopotamia between them were still their own masters. The arrangements of the nameless tombs in lower Chaldæa are extremely simple and their furnishing very poor, if we compare them with the sepulchres in the Egyptian cemeteries. As for Assyrian burying-places, none have yet been discovered. Tombs have certainly been found at Nimroud, at Kouyundjik, at Khorsabad, and in all the mounds in the neighbourhood of Mossoul, but never among or below the Assyrian remains. They are always in the mass of earth and various *débris* that has accumulated over the ruins of the Assyrian palaces, which is enough to show that they date from a time posterior to the fall of the Mesopotamian Empires. Any doubts that may have lingered on this point have been removed by the character of the objects found, which are never older than the Seleucidæ or the Parthians, and sometimes date even from the Roman epoch.[1]

[1] Upon the tombs found at Nimroud see LAYARD, *Nineveh*, vol. i. pp. 17-19 and p. 352; vol. ii. pp. 37, 38. Some funerary urns discovered at Khorsabad are figured in BOTTA, *Monument*, &c. plate 165. There is one necropolis in Assyria that, in the employment of terra-cotta coffins, resembles the graveyards of Chaldæa; it is that of Kaleh-Shergat, which has long been under process of rifling by the Arabs, who find cylinders, engraved stones, and jewels among its graves. PLACE judges from the appearance of the coffins and other objects found that this necropolis dates from the Parthian times (*Ninive*, vol. ii. pp. 183-185). LAYARD is of the same opinion (*Nineveh*, vol. ii. pp. 58, 154, 155). Mr. Rassam found tombs at Kouyundjik, but much too late to be Assyrian (LOFTUS, *Travels and Researches*, p. 198, note). Loftus found some bones in a roughly-built vault some seventeen feet below the level of the south-eastern palace at Nimroud, but he acknowledges he saw nothing to lead him to assign these remains to the Assyrian epoch more than to any other (*Travels and Researches*, p. 198). Layard was disposed to see in the long and narrow gallery cleared by him at Nimroud (in the middle of the staged tower that rises at the north-western corner of the mound) a sepulchral vault in which the body of a king must once have been deposited (*Discoveries*, pp. 126, 128), but he confesses that he found nothing in it, neither human remains nor any trace of sepulchral furniture. His conjecture is therefore entirely in the air, and he himself only puts it forth under all reserve. The difficulty of this inquiry is increased by the fact that

What then did the Assyrians do with their dead? No one has attacked this question more vigorously than Sir Henry Layard. In his attempt to answer it he explored the whole district of Mossoul, but without result; he pointed out the interest of the inquiry to all his collaborators, he talked about it to the more intelligent among his workmen, and promised a reward to whoever should first show him an Assyrian grave. He found nothing, however, and neither Loftus, Place, nor Rassam have been more successful. Neither texts nor monuments help us to fill up the gap. The excavations of M. de Sarzec have indeed brought to light the fragments of an Assyrian stele in which a funerary scene is represented, but unfortunately its meaning is by no means clear.[1] I cannot point to an Assyrian relief in which the same theme is treated. Among so many battle pictures we do not find a single scene analogous to those so often repeated in the pictures and sculptures of Greece. The death and burial of an Assyrian warrior gave a theme to no Assyrian sculptor. It would appear that the national pride revolted from any confession that Assyrians could be killed like other men. All the corpses in the countless battle-fields are those of enemies, who are sometimes mutilated and beheaded.[2]

These despised bodies were left to rot where they fell, and to feed the crows and vultures;[3] but it is impossible to believe that

the people of different religions by whom the Assyrians were succeeded always chose by preference to bury their dead at high levels. Even in our own day it is, as a rule, upon the heights studded over the plains that Christians, Mussulmans, and Yezidis establish their cemeteries; and these have become grave obstacles to the explorer in consequence of the natural disinclination on the part of the peasantry to disturb what may be the ashes of their ancestors. BENNDORF (*Gesichtshelme*, plate xiv. figs. 1 and 2) reproduces two golden masks similar to those found at Mycenæ, which were found, the one at Kouyundjik, the other at some unknown point in the same district; he mentions (pp. 66, 67) a third discovery of the same kind. But the character of the objects found with these masks seems clearly to show that the tombs from which they were taken were at least as late as the Seleucidæ, if not as the Roman emperors (Cf. HOFFMANN, in the *Archäologische Zeitung* for 1878, pp. 25-27).

[1] When we come to speak of Chaldæan sculpture, we shall give a reproduction of this relief. We cannot make much use of it in the present inquiry, because its meaning is so obscure. The stone is broken, and the imperfections of the design are such that we can hardly tell what the artist meant to represent. The two figures with baskets on their heads for instance—are they bringing funeral offerings, or covering with earth the heaped-up corpses on which they mount?

[2] LAYARD, *Monuments*, 1st series, plates 14, 21, 26, 57, 64, &c.

[3] In more than one battle scene do we find these birds floating over the heads of

the Assyrians paid no honours to the bodies of their princes, their nobles, and their relations, and some texts recently discovered make distinct allusions to funerary rites.[1] We can hardly agree to the suggestions of M. Place, who asks whether it is not possible that the Assyrians committed their corpses to the river, like the modern Hindoos, or to birds of prey, like the Guebres.[2] Usages so entirely out of harmony with the customs of other ancient nations would certainly have been noticed by contemporary writers, either Greek or Hebrew. In any case some allusion to them would survive in Assyrian literature, but no hint of the kind is to be found.

But after we have rejected those hypotheses the question is no nearer to solution than before; we are still confronted by the remarkable fact that the Assyrians so managed to hide their dead that no trace of them has ever been discovered. A conjecture offered by Loftus is the most inviting.[3] He reminds us that although cemeteries are entirely absent from Assyria, Chaldæa is full of them. Between Niffar and Mugheir each mound is a necropolis. The Assyrians knew that Chaldæa was the birthplace of their race and they looked upon it as a sacred territory. We find the Ninevite kings, even when they were hardest upon their rebellious subjects in the south, holding it as a point of honour to preserve and restore the temples of Babylon and to worship there in royal pomp. Perhaps the Assyrians, or rather those among them who could afford the expenses of the journey, had their dead transferred to the graveyards of Lower Chaldæa. The latter country, or, at least, a certain portion of it, would thus be a kind of holy-land where those Semites whose earliest traditions were connected with its soil would think themselves assured of a more tranquil repose and of protection from more benignant deities. The soil of Assyria itself would receive none but the corpses of those slaves and paupers who, counting for nothing in their lives,

the combatants (Layard, *Monuments*, 1st series, plates 18, 22, 26, &c). We may also refer to the curious monument from Tell-lôh, in which vultures carrying off human heads and limbs in the clouds are represented. For an engraving of it see our chapter on Chaldæan sculpture.

[1] See an article published by M. J. Halévy in the *Revue archéologique*, vol. xliv. p. 44, under the title: *L'Immortalité de l'Âme chez les Peuples sémitiques.*

[2] Place, *Ninive*, vol. ii. p. 184.

[3] Loftus, *Travels and Researches*, pp. 198, 199.

would be buried when dead in the first convenient corner, without epitaph or sepulchral furnishing.

This hypothesis would explain two things that need explanation—the absence from Assyria of such tombs as are found in every other country of the Ancient World, and the great size of the Chaldæan cemeteries. Both Loftus and Taylor received the same impression, that the assemblages of coffins, still huge in spite of the numbers that have been destroyed during the last twenty centuries, can never have been due entirely to the second and third rate cities in whose neighbourhood they occur. Piled one upon another they form mounds covering wide spaces of ground, and so high that they may be seen for many miles across the plain.[1] This district must have been the common cemetery of Chaldæa and perhaps of Assyria; the dead of Babylon must have been conveyed there. Is it too much to suppose that by means of rivers and canals those of Nineveh may have been taken there too? Was it not in exactly that fashion that mummies were carried by thousands from one end of the Nile valley to the other, to the places where they had to rejoin there ancestors?[2]

But we need not go back to Ancient Egypt to find examples of corpses making long journeys in order to reach some great national burying-place. Loftus received the first hint of his suggestion from what he himself saw at Nedjef and at Kerbela, where he met funeral processions more than once on the roads of Irak-Arabi. From every town in Persia the bodies of Shiite Mussulmans, who desire to repose near the mortal remains of Ali

[1] LOFTUS especially speaks strongly upon this point (*Travels*, &c. p. 199). "By far the most important of these sepulchral cities is Warka, where the enormous accumulation of human remains proves that it was a peculiarly sacred spot, and that it was so esteemed for many centuries. It is difficult to convey anything like a correct notion of the piles upon piles of human relics which there utterly astound the beholder. Excepting only the triangular space between the three principal ruins, the whole remainder of the platform, the whole space between the walls, and an unknown extent of desert beyond them, are everywhere filled with the bones and sepulchres of the dead. There is probably no other site in the world which can compare with Warka in this respect; even the tombs of Ancient Thebes do not contain such an aggregate amount of mortality. From its foundation by Urukh until finally abandoned by the Parthians—a period of probably 2,500 years—Warka appears to have been a sacred burial-place!"

[2] See the curious paper of M. E. LE BLANT entitled: *Tables égyptiennes à Inscriptions grecques* (*Revue archéologique*, 1874).

and his son, are transported after death into Mesopotamia.[1] According to Loftus the cemetery of Nedjef alone, that by which the mosque known as *Meched-Ali* is surrounded, receives the bodies of from five to eight thousand Persians every year. Now the journey between Nineveh and Calah and the plains of Lower Chaldæa was far easier than it is now—considering especially the state of the roads—between Tauris, Ispahan, and Teheran, on the one hand and Nedjef on the other. The transit from Assyria to Chaldæa could be made, like that of the Egyptian mummy, entirely by water, that is to say, very cheaply, very easily, and very rapidly.

We are brought up, however, by one objection. Although as a rule subject to the Assyrians, the Chaldæans were from the eleventh to the seventh century before our era in a constant state of revolt against their northern neighbours; they struggled hard for their independence and waged long and bloody wars with the masters of Nineveh. Can the Assyrian kings have dared to confide their mortal remains to sepulchres in the midst of a people who had shown themselves so hostile to their domination? Must they not have trembled for the security of tombs surrounded by a rebellious and angry populace? And the furious conflicts that we find narrated in the Assyrian inscriptions, must they not often have interrupted the transport of bodies and compelled them to wait without sepulture for months and even years?

Further explorations and the decipherment of the texts will one day solve the problem. Meanwhile we must attempt to determine the nature of Chaldæo-Assyrian beliefs as to a future life. We shall get no help from Herodotus. Intending to describe the manners and customs of the Chaldæans in a special work that he either never wrote or that has been lost,[2] he treated Mesopotamia in much less ample fashion than Egypt, in his history. All that he leaves us on the subject we are now studying is this passing remark, "The Babylonians put their dead in honey, and their funerary lamentations are very like those of the Egyptians."[3] Happily we have the Chaldæan cemeteries and the sculptured monuments of Assyria to which we can turn for information. The

[1] In his sixth and seventh chapters LOFTUS gives a very interesting account of his visits to the sanctuaries of Nedjef and Kerbela.

[2] The work he alludes to as his Ἀσσύριοι λόγοι (i. 184).

[3] HERODOTUS, i. 198.

funerary writings of the Egyptians allow us to read their hearts as an open book. We know that the men who lived in the days of the ancient empire looked upon the posthumous life as a simple continuation of life in the sun. They believed it to be governed by the same wants, but capable of infinite prolongation so long as those wants were supplied. And so they placed their dead in tombs where they were surrounded by such things as they required when alive, especially by meat and drink. Finally, they endeavoured to ensure them the enjoyment of these things to the utmost limit of time by preserving their bodies against dissolution. If these were to fall into dust the day after they entered upon their new abode, the provisions and furniture with which it was stocked would be of no use.

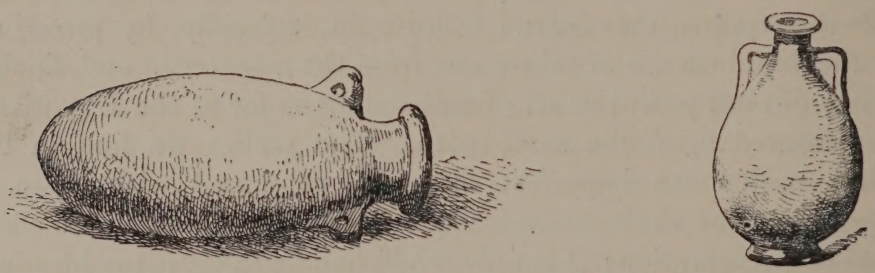
The Chaldæans kept a similar object before them. They neglected nothing to secure the body against the action of damp, in the first place by making the sides of their vaults and the coffins themselves water-tight, secondly, by providing for the rapid escape of rain-water from the cemetery,[1] and, finally, if they did not push the art of embalming so far as the Egyptians, they entered upon the same path. The bodies we find in the oldest tombs are imperfect mummies compared with those of Egypt, but the skeleton, at least, is nearly always in an excellent state of preservation; it is only when handled that it tumbles into dust. In the more spacious tombs the body lies upon a mat, with its head upon a cushion. In most cases the remains of bandages and linen cloths were found about it. Mats, cushions, and bandages had all been treated with bitumen. A small terra-cotta model in the British Museum shows a dead man thus stowed in his coffin; his hands are folded on his breast, and round the whole lower part of the body the bands that gave him the appearance of a mummy may be traced.

The funerary furniture is far from being as rich and varied as it is in the tombs of Egypt and Etruria, but the same idea has governed the choice of objects in both cases. When the corpse

[1] See above, pp. 158-9 and fig. 49. The details that here follow are borrowed from the narrations of those who have explored the sepulchral mounds of lower Chaldæa. Perhaps the most important of these relations is that of Mr. J. E. TAYLOR, to which we have already referred so often (*Notes on the Ruins of Mugeyr*, to which may be added his *Notes on Abou-Sharein and Tell-el-lahm*, p. 413, in the same volume of the *Journal*). Cf. LOFTUS's eighteenth chapter (*Travels*, &c. p. 198) and the pages in LAYARD's *Discoveries*, from 556 to 561.

is that of a man we find at his side the cylinder which served him as seal, his arms, arrow heads of flint or bronze, and the remains of the staff he carried in his hand.[1] In a woman's tomb the body has jewels on its neck, its wrists and ankles; jewels are strewn about the tomb and placed on the lid of the coffin. Among other toilet matters have been found small glass bottles, fragments of a bouquet, and cakes of the black pigment which the women of the East still employ to lengthen their eyebrows and enhance their blackness.[2]

The vases which are always present in well-preserved tombs, show the ideas of the Mesopotamians on death more clearly than anything else. Upon the palm of one hand or behind the head is placed a cup, sometimes of bronze, oftener of terra-cotta. From it the dead man can help himself to the water or fermented liquors with which the great clay jars that are spread over the



Figs. 159, 160.—Vases; from Warka. British Museum.

floor of his grave are filled (Figs. 159 and 160). Near these also we find shallow bowls or saucers, used no doubt as plates for holding food. Date-stones, chicken and fish bones are also present in great numbers. In one tomb the snout of a swordfish has been found, in another a wild boar's skull. It would seem too that the idea of adding imitation viands to real ones occurred to the Chaldæans as well as to the Egyptians.[3] From one grave opened by Taylor four ducks carved in stone were taken.

The sepulchres in which the objects we have been mentioning were found, are the most ancient in Chaldæa—on this all the explorers are agreed. Their situation in the lowest part of the

[1] "Each of the Babylonians," says Herodotus (i. 195), "carries a seal and a walking-stick carved at the top into the form of an apple, a rose, a lily, an eagle, or something similar, for it is not their habit to use a stick without an ornament."

[2] Loftus, *Travels*, p. 212.

[3] See *Art in Ancient Egypt*, vol. i. p. 145, note 3.

funerary mounds, the aspect of the characters engraved upon the cylinders and the style of the things they contained, all go to prove their age. In similar tombs discovered by M. de Sarzec at Sirtella, in the same region, a tablet of stone and a bronze statuette, differing in no important particular from those deposited in foundation stones, were found. The texts engraved upon them leave no doubt as to their great antiquity.[1] It is then to the early Chaldæan monarchy that we must assign these tombs, which so clearly betray ideas and beliefs practically identical with those that find their freest expression in the mastabas of the ancient Egyptian Empire.

In Mesopotamia, as in Egypt, the human intellect arrived with the lapse of time at something beyond this childish and primitive belief. Men did not, however, repel it altogether as false and ridiculous; they continued to cherish it at the bottom of their hearts, and to allow it to impose certain lines of action upon them which otherwise could hardly be explained or justified. As in Egypt, and in later years in Greece, a new and more abstract conception was imposed upon the first. Logically, the second theory was the negation of its predecessor, but where imagination and sentiment play the principal *rôle*, such contradictions are lost sight of.

We have elsewhere[2] traced the process by which the imagination was led to sketch out a new explanation of the mystery of death. As man's experience increased, and his faculty for observation became more powerful, he had to make a greater mental effort before he could believe in the immortality of the body, and in a life prolonged to infinity in the darkness of the tomb. In order to satisfy the craving for perpetuity, a something was imagined, we can hardly say what, a shade, an *imago*, that detached itself from the body at the moment of death, and took itself off with the lightness of a bird. A great space, with no definite size, shape, or situation, in which these shades of the departed could meet each other and enjoy greater freedom than in the tomb, was added to the first conception. This less material belief was better adapted than the first to the moral instincts of humanity. A material and organic existence passed in the grave dealt out the

[1] *Les Fouilles de Chaldée, communication d'une Lettre de M. de Sarzec*, par LÉON HEUZEY, § 1 (in the *Revue archéologique* for November, 1881).

[2] *Art in Ancient Egypt*, vol. i. pp. 127 *et seq.*

same fate to good and bad alike. On the other hand, nothing was more easy than to divide the kingdom of the shades into two compartments, into two distinct domains, and to place in one those whose conduct had been deserving of reward; in the other, those whose crimes and vices had been insufficiently punished upon earth.

It is not to the Chaldæan sepulchres that we owe our knowledge that the Semites of Mesopotamia followed in the footsteps of the Egyptians, when they found themselves in face of the problem of life and death; it is to the literature of the Assyrians. Among those tablets of terra-cotta from the library of Assurbanipal that are now preserved in the British Museum, George Smith discovered, in 1873, a mythological document in which the descent of Istar to the infernal regions in search of her lover Tammouz is recounted. Of this he gives a first translation, which is already out of date. Since his discovery was announced, the most learned Assyriologists have made a study of the document, and now even those among them who most seldom think alike, are in agreement as to its meaning except in a few unimportant particulars.[1] No doubt remains as to the general significance of the piece; we may even compare it with other documents from the same library in which there is much to confirm and complete its contents.

Even if there were no evidence to the contrary, we might safely affirm that the first conception was not effaced from the minds of the Assyrians by the second. M. Halévy has translated an Assyrian text, whose meaning he thus epitomizes: "What becomes of the individual deposited in a tomb? A curious passage in one of the 'books' from the library of Assurbanipal answers this question, indirectly, indeed, but without any ambiguity. After death the vital and indestructible principle, the incorporeal spirit,

[1] M. Oppert has translated this text in full in a work entitled: *L'Immortalité de l'Âme chez les Chaldéens* (*Annales de Philosophie chrétienne*, vol. viii. 1884), and he has reproduced his version with a few modifications of detail in *Fragments Mythologiques* (Quantin, 1881, 18mo). M. Halévy has given long extracts from the same document in an article in the *Revue des Études Juives* (October-December, 1881), entitled: *Les Inscriptions peintes de Citium*, § 2; he has returned to the same subject in an article in the *Revue archéologique* (July, 1882), *L'Immortalité de l'Âme chez les Peuples sémitiques*. We reproduce his translation as the most recent. Herr Schrader has devoted a whole book to the translation and explanation of this same myth (*Die Hœllenfahrt der Istar*, Giessen, 1874).

is disengaged from the body; it is called in Assyrian *ékimmou* or *égimmou*. . . . The *ékimmou* inhabits the tomb and reposes upon the bed (*zalalu*) of the corpse. If well treated by the children of the defunct, he becomes their protector; if not, their evil genius and scourge. The greatest misfortune that can befall a man is to be deprived of burial. In such a case his spirit, deprived of a resting-place and of the funerary libations, leads a wandering and miserable existence; he is exposed to all kinds of ill-treatment at the hands of his fellow spirits, who show him no mercy."

Here we find certain elements of that primitive belief that would escape us in a mere examination of the Chaldæan tombs. We see how they understood the connection between the living and the dead, and why they so passionately desired to receive due sepulture. These ideas and sentiments are identical with those which M. Fustel de Coulanges has analysed so deeply in his *Cité antique*. They subsisted in all their strength in Assyria, and must have had all the consequences, all the social effects that they had elsewhere, and yet we find mentioned a home for the dead, a joyless country in which they could assemble in their countless numbers; as Egypt had its *Ament* and Greece her *Hades*, so Chaldæa and Assyria had their hell, their place of departed ghosts. We know from the narrative of Istar that they looked upon it as an immense building, situated in the centre of the earth and bounded on every side by the great river whose waters bathe the foundations of the world. This country of the dead is called the "land where one sees nothing" (*mat la namari*), or the "land whence one does not return" (*mat la tayarti*). The government of the country is in the hands of Nergal, the god of war, and his spouse Allat, the sister of Astarte. The house is surrounded by seven strong walls. In each wall there is a single door, which is fastened by a bolt as soon as a new comer has entered. Each door is kept by an incorruptible guardian. We cannot quote the whole of the story; we give, however, a few lines in which the chief features of the Assyrian conception is most clearly shown. Istar speaks :—

Let me return [toward the house],
. . . . . .
[Toward] the house in which Irkalla lives,
In which the evening has no morning,
[Towards the country] whence there is no return,

[Whose inhabitants,] deprived of light,
[Have dust for food] and mud to nourish them,
A tunic and wings for vesture,
[Who see no day,] who sit in the shadows,
[In the house] into which I must enter,
[They live there,] (once) the wearers of crowns,
[The wearers] of crowns who governed the world in ancient days,
Of whom Bel and Anou have perpetuated the names and memory.
There too stand the foundations of the earth, the meeting of the mighty waters,
In the palace of dust into which I must come,
Live the prince and the noble,
Live the king and the strong man,
Live the guardians of the depths of the great gods,
Live Ner and Etana.

A long dialogue follows between Istar and the guardian of the gate, by which we find that there was a rigorous law compelling all who came to strip themselves of their clothes before they could enter. In spite of her resistance, Istar herself was obliged to submit to this law. From other texts we learn that the entrance to these infernal regions was situated at the foot of the "northern mountain," a sort of Assyrian Olympus.

According to the fragment above quoted the condition of the dead was truly piteous; they had no food but dust and mud; their dwelling is sometimes called *bit-edi*, the "house of solitude," because in the life of misery and privation they lead no one takes any thought for others, his only care is to relieve his own troubles. Consequently there are no families nor any social or common life. The conscience protested against the injustice of confounding with the crowd those mortals who had distinguished themselves when alive by their exploits or virtues. Thus we find in a recently copied passage from the great epic of Izdubar, the Assyrian Hercules, that valiant soldiers—those no doubt who had fallen in the "Wars of Assur"—were rewarded for their prowess. As soon as they entered the shadow kingdom they were stretched upon a soft couch and surrounded by their relations. Their father and mother supported the head the enemy's sword had wounded, their wives stood beside them and waited on them with zeal and tenderness. They were refreshed and had their strength restored by the pure water of life.

The idea of a final reward is expressed in still more unmistakable accents in a religious song of which two fragments

have come down to us. The poet celebrates the felicity of the just taking his food with the gods and become a god himself :—

Wash thy hands, purify thy hands,
The gods, thine elders, will wash and purify their hands ;
Eat the pure nourishment in the pure disks,
Drink the pure water from the pure vases ;
Prepare to enjoy the peace of the just !

. . . . . .

They have brought their pure water,
Anat, the great spouse of Anou,
Has held thee in her sacred arms ;
Iaou has transferred thee into a holy place ;
He has transferred thee from his sacred hands ;
He has transferred thee into the midst of honey and fat,
He has poured magic water into thy mouth,
And the virtue of the water has opened thy mouth.

. . . . . .

As to where this paradise was placed we have no certain information. It could hardly have been a mere separate district of that abode of shades that is painted in such sombre colours. We must suppose that it was open to the sunlight ; it was perhaps on one of the slopes of the *Northern Mountain*, in the neighbourhood of the luminous summit on which the gods and goddesses had their home.

The idea of a reward for the just carries as its corollary that of a punishment for the unjust, but in spite of the logical connection between the two notions, we cannot affirm that the Elysium of these Semites had a Tartarus by its side. No allusion to such a place has been found in any of the texts already translated. On the other hand, we find some evidence that the Assyrians believed in the resurrection of the dead. Marduk and his spouse Zarpanitu often bear the title of "those who make the dead live again" (*muballith* or *muballith-at miti* or *mituti*). The same epithet is sometimes given to other deities, especially to Istar. As yet we do not know when and under what conditions renewed life was to be granted.

We need hardly add that the ideas that find expression in the Assyrian texts were by no means peculiar to the northern people. All Assyriologists agree that in everything connected with the intellect, the Assyrians invented nothing ; they did nothing but adapt and imitate, translate and copy from the more prolific

Chaldæans, who furnished as it were the bread upon which their minds were nourished. It is the Chaldee intellect that we study when we question the texts from the library of Assurbanipal.

Other passages in these terra-cotta books help to complete and illustrate those from which we have, as it were, gained a first glimpse of the Assyrian Under-world; but we shall never, in all probability, know it as we already know that of the Egyptians. This is partly, perhaps, because it was less complex, and partly because the fascination it exercised over the mind of man was not so great.

History contains no mention of a people more preoccupied with the affairs of the grave than the Egyptians. Doubtless the Chaldæans had to give a certain amount of their attention to the same problem, and we know that it was resolved in the same sense and by the same sequence of beliefs both on the banks of the Euphrates and on those of the Nile; but other questions were more attractive to the peoples of Mesopotamia. Their curiosity was roused chiefly by the phenomena of the skies, by the complicated phantasmagoria offered nightly in the depths above. These they set themselves to observe with patience and exactitude, and it is to the habits thus formed that they, in part at least, owed their scientific superiority and the honour they derive from the incontestable fact that they have furnished to modern civilization elements more useful and more readily assimilated than any other great people of the remote past.

And yet the Semites of Chaldæa were not without myths relating to the abode of departed souls of which some features may be grasped. In order to get a better comprehension of them, we must not only look to the discovery and translation of new texts, but to the intelligent study of figured representations. At least this seems to be the lesson of a curious monument recently discovered.[1]

[1] See M. Clermont-Ganneau's *L'Enfer assyrien*, first part (*Revue archéologique* vol. xxxviii. and plate xxv.). The second article, which should have contained the explanation of this little monument, has never appeared, to the great regret of all who appreciate the knowledge and penetration of that learned writer at their proper value. The first article is nothing but a detailed description, which we abridge. Certain doubts were expressed at the time of its publication as to the authenticity of this object; nothing, however, has happened to confirm them. Both in composition and execution it is excellent. M. Péretié, moreover, was not one to be easily deceived. M. Clermont-Ganneau described and illustrated this bronze plate

People may differ as to the significance of this or that detail, but no one will deny that the plaque is religious and funerary in its general character, and that, whatever may have been its purpose, it is as a whole connected with the memory and worship of the dead, and therefore that this is the place for such remarks as we have to make upon it.

The object in question is a bronze plaque, sculptured on both faces, which Péretié acquired at Hama in Northern Syria. The dealer from whom he bought it declared that it came into his hands from a peasant of Palmyra. As to where the latter found it we know nothing. In any case the oasis of Tadmor was a dependency of Mesopotamia as long as the power of the Chaldæan and Assyrian monarchies lasted, and the characteristic features of the work in question are entirely Assyrian. In that respect neither Péretié nor Clermont-Ganneau made any mistake.

This plaque is a tall rectangle in shape. At its two upper angles there are salient rings or staples, apparently meant to receive a cord or chain. At the bottom it has a slight ledge, suggesting that it stood upon its base and was suspended at the same time. However this may have been, it should be carefully noticed that both of its faces were meant to be seen.

The face we call the obverse is entirely occupied by the body of a fantastic quadruped, partly chiselled in slight relief, partly engraved. This monster is upright on his hind feet; his back is turned to the spectator, while the lower part of his body is seen almost in profile. He clings with his two fore feet to the upper edge of the plaque, and looks over it as over a wall. His fore paws and his head are modelled in the round. He has four wings; two large ones with imbricated feathers grow from his shoulders, while a smaller pair are visible beneath them. This arrangement we have already encountered in undoubted Assyrian monuments (see Figs. 8, 29, and 123). If we turn the plaque, we find ourselves face to face with the beast. His skull is depressed, his features hideous, his grinning jaws wrinkled like those of a lion or panther. His feline character is enforced by his formidable claws.

The body, lithe and lean as that of a leopard, is covered with a reticulated marking. His upturned tail nearly touches his loins,

from photographs, but since his paper appeared he has again visited the East and seen and handled the original.

while another detail of his person exactly reproduces the contours of a snake.[1] The hind feet are those of a bird-of-prey.

We must now describe the reverse of this singular monument (Fig. 162). In the first place its upper edge is surmounted by the claws and face of the beast just described, which thus dominates, as it were, the scenes depicted below.

Fig. 161.—Plaque of chiselled bronze. Obverse. From the *Revue archéologique.*

These scenes are divided by horizontal bands into four divisions, and those divisions are by no means arbitrary; they show us what the sculptor thought as to the four regions into which the

[1] M. Clermont-Ganneau reminds us that this peculiarity is repeated in a monster on one of the Nimroud reliefs (see Layard, *Monuments*, series ii. plate 3).

Assyrian universe was divided. Those regions are the *heavens*, the *atmosphere*, the *earth*, and *hell* or *hades*.

The highest division is the narrowest of all. It only contains the stars and a few other symbols grouped almost exactly as we find them on not a few monuments of Mesopotamia.[1] The non-sidereal emblems in this division are, no doubt, the attributes of gods who live beside the stars in the depths of the firmament.

FIG. 162.—Plaque of chiselled bronze. Reverse.

In the second division we find seven animal-headed personages passing from right to left. We need not stop to describe their appearance or gesture; we have already encountered them

[1] See above, p. 72, and Figs. 3, 10, 11, 12. See also the notes to M. Clermont-Ganneau's article. He has no difficulty in showing how general was the use of these emblems.

at Nineveh mounting guard at the palace gates (Figs. 6 and 7); they belong to the class of demons who, according to circumstances, are alternately the plagues and protectors of mankind. The place they occupy represents a middle region between heaven and earth, namely, the atmosphere, which was believed to be entirely peopled by these genii.

The third division contains a funerary scene by which we are at once transported to earth. On the right there is a standard or candelabrum, and on the left a group of three figures. One of these appears to be a man, the other two have lions' heads and resemble the genii of the division above. The most important group, however, is the one in the middle. A man swathed in a kind of shroud is stretched on a bed, at the head and foot of which appear two of those personages, half man and half fish, in which the Oannes of Berosus has been recognized (Figs. 9 and 67).[1] The figure on the bed must be that of a corpse wrapped in those linen bandages of which so many fragments have been found in the tombs of Lower Chaldæa. The two fish-like gods brandish something over the corpse which appears, so far as it can be made out, to be a flower or bunch of grass. Their gesture appears to be one of benediction, like that of a modern priest with the holy-water-sprinkler.

The lowest division is by far the most roomy of the four. It evidently represents the regions under the earth, and both its size and the complication of its arrangements show us that it was, in the opinion of the artist, more important than either of the three above it. The whole of its lower part is occupied by five fishes all swimming in one direction, a conventional symbol always employed by Assyrian artists to represent a river. The left bank is indicated by a raised line running from one side of the plaque to the other. On this bank towards the left of the relief there are two shrubs or reeds above which appears a group of objects whose character is not easily made out. Are they ideographic signs or funeral offerings? The latter more likely. At any rate we may distinguish vases, bottles, a small box or comb and especially the foot of a horse drawn with great precision. At the other end of this division a hideous monster advances on the river bank. Its semi-bestial, semi-human head is flat and scarred, with a broad upturned nose and a mouth reaching to the ears. The upper part

[1] See page 65.

of its body is that of a man, although its skin is seamed all over with short vertical lines meant to indicate hairs. One arm is raised and the other lowered, like those of the genii in the second division. His tail is upturned, his feet are those of a bird, and his wings show over his left shoulder. On the whole, the resemblance between this figure and the nondescript beast on the obverse of the plaque is so great that we are tempted to think that they both represent the same being.

Upon the river and in the centre of this division a scene is going forward that takes up more than a third of the whole field. It is no doubt the main subject. A small boat glides down the stream, its poop adorned with the head of a quadruped, its prow with that of a bird. In this boat there is a horse, seen in profile and with its right fore leg bent at the knee. The attitude of this animal, which seems born down by a crushing weight, is to be explained by the rest of the composition. The poor quadruped bears on his back, in fact, the body of a gigantic and formidable divinity, who makes use of him not in the orthodox fashion but merely as a kind of pedestal; his or rather her right knee rests upon the horse's back while her left foot—which is that of a bird-of-prey—grasps the animal's head. The legs of this strange monster are human, and so is her body, but here, as in the personage walking by the river side, we find the short scratches that denote hair; her head is that of a lioness. For although her sex may appear doubtful to some it is difficult to explain the action of the two lion-cubs that spring towards her breasts otherwise than by M. Clermont-Ganneau's supposition that they are eager for nourishment.

The bosom attacked by the two cubs is seen from in front, but the head above it is in profile, and so high that it rises above the line that divides this lower division from the one immediately above it. The jaws are open, that is to say they grin in harmony with those of the monster looking over the top of the plaque, with the genii of the third division and that of the river bank. All this, however, was insufficient to satisfy the artist's desire for a terror-striking effect, and in each hand of the goddess he has placed a long serpent which hangs vertically downwards, and shows by its curves that it is struggling in her grip. Between the limbs of the goddess and the horse's mane there is something that bears a vague resemblance to a scorpion.

We cannot pretend to notice every detail of this curious

monument as their explanation would lead us too far, and, with all the care we could give them, we should still have to leave some unexplained. We shall be satisfied with pointing out those features of the composition whose meaning seems to be clear.

In the first place the division of the field into four zones should be noticed; it coincides with what we know of the Assyrian mode of dividing the universe among the powers of heaven, the demons, mankind, and the dead. The chief incident of the third zone shows us that, like the Egyptians, the Assyrians wished to assure themselves of the protection of some benevolent deity after death. In the Nile valley that protector was Osiris, in Mesopotamia Anou, Oannes, or Dagon, the fish-god to whom man owed the advantages of civilization in this world and his safety in the next. The kingdom of shadows, into which he had to descend after death, was peopled with monstrous shapes, to give some idea of which sculptors had gone far afield among the wild beasts of the earth, and had brought together attributes and weapons that nature never combines in a single animal, such as the claws of the scorpion, the wings and talons of the eagle, the coils of the serpent, the mane and muzzle of the great carnivora. The conception which governs all this is similar to that of which we see the expression in those Theban tombs where the dead man prosecutes his voyage along the streams of Ament, and runs the gauntlet of the grimacing demons who would seize and destroy him but for the shielding presence of Osiris. And the resemblance is continued in the details. The boat is shaped like the Egyptian boats;[1] the river may be compared to the subterranean Nile of the Theban tombs, while it reminds us of the Styx and Acheron of the Grecian Hades. We remember too the line of the chant we have quoted:

"There too stand the foundations of the earth, the meeting of the mighty waters."

Certain obscure points that still exist in connection with the Chaldæo-Assyrian *inferno* and with the personages by whom it is peopled, will, no doubt, be removed as the study of the remains progresses. We have been satisfied for the moment to explain, with the help of previous explorers, the notions of the

[1] Compare Figs. 23, 31, and especially 159 and 209 of *Art in Ancient Egypt*, vol. i.

Semites of Mesopotamia upon death and a second life, and to show that they did not differ sensibly from those of the Egyptians or of any other ancient people whose ideas are sufficiently known to us.

§ 2. *The Chaldæan Tomb.*

The principle of the Chaldæan sepulchre was similar to that of the Egyptian mastaba or hypogeum; it had to supply the same wants and to render the same services; the task imposed upon the architect was in each case governed by the same general idea. Why then have we found nothing in Mesopotamia that may be compared, even at the most respectful distance, with the splendid tomb-houses of the Theban necropolis, nor even with those of Phœnicia, Asia Minor, or Etruria? The reason for the difference is easily told; it is to be found in the nature and configuration of the country itself. There were no mountains in whose sides tomb-chambers could be cut, and in the loose permeable soil of the plain it would have been practically impossible to establish pits that should be at once spacious and durable.

We shall find, no doubt, in almost every country, sepulchres constructed above the soil likes palaces and temples. In Egypt we have already encountered the pyramid, but even there the tomb-chamber is in most cases cut in the rock itself, and the huge mass of stone above it is nothing more than a sort of colossal lid. Funerary architecture is not content, like that of civil or religious buildings, to borrow its materials from the rock; it cuts and chisels the living rock itself. In every country the first idea that seems to occur to man, when he has the mortal remains of his own people to make away with, is to confide them to the earth. In mountainous countries rock is everywhere near the soil and rises through it here and there, especially on the slopes of the hills. It is as a rule both soft enough to be easily cut with a proper tool, and hard enough, or at least sufficiently capable of hardening when exposed to the air, faithfully to preserve any form that may be given to it. As soon as man emerged from barbarism and conceived the desire to carry with him into the next world the goods he had enjoyed in this, the hastily cut hole of the savage became first an ample chamber and then a collection of chambers.

It became a richly furnished habitation, a real palace. But even then the features that distinguish a house of the living from one of the dead were carefully preserved. The largest of the tombs in the Biban-el-Molouk is no more than the development of the primitive grave. As for those tombs in which the sepulchral chamber is above the ground, as in the famous Mausoleum of Halicarnassus, they are merely brilliant exceptions, embodiments of princely caprice or architectural ambition. Funerary architecture is, in virtue of its destination, a subterranean architecture, an architecture of the rock. The countries in which it has been managed with the greatest power and originality are those whose soil lent itself most kindly to the work of excavation. The limestone and sandstone chains of the Nile valley, the abrupt flanks of Persian ravines, of Cappadocian and Lycian hillsides, and the rocky slopes of Greece and Etruria, were excellently fitted for the work of the funerary architect.

If the civilization of the Mesopotamian Semites had originated in the country above Nineveh, at the foot of those hills in which the Tigris has its springs, the fathers of the people would perhaps have cut tomb chambers like those of Egypt in the soft gypsum, and, in later years, their descendants, instead of breaking entirely with the traditions of the past would have raised *tumuli* in the plains and constructed within them brick chambers to take the place of vaults cut in the living rock. Chaldæa would then have been dotted over with sepulchral mounds like those with which the steppes of central Russia are covered. Nothing of the kind has as yet been discovered; none of the *tells* or mounds of sun-dried bricks have yet been identified as tombs, and that is because, as we have seen, the course of civilization was from south to north; the first impulse came from the shores of the Persian Gulf, from the people inhabiting alluvial plains consisting merely of sand and broken stone. From the very first hour these people had to compel clay, kneaded and dried in the sun or the brick kiln, to render the services which are demanded from stone elsewhere. They were content therefore with entombing their dead either in small brick vaults, under large terra-cotta covers, or in coffins of the latter material.

The tomb chamber illustrated in our Fig. 89 may be taken as a type. It is five feet high by seven feet long, and three feet seven inches wide. The vault is closed at the top by a single row of

bricks and at each end by a double wall of the same material. There are no doors. The tombs once shut must have been inaccesible. The structure was put together with such care that neither dust nor water could get within it. Some of these graves, and among them this particular one, inclosed only one skeleton. Taylor found fourteen clay vases in it, not to mention other objects such as a walking stick, rings, cylinders, and bronze cups. Besides these there was a gold waist-band about an inch wide, showing it to be the grave of a rich man. In other tombs as many as three, four, and even eleven skeletons were found. In these the brick under the head and the bronze cup in the hand were sometimes missing, but the water jars were always there.

FIG. 163.—Tomb at Mugheir; from Taylor.

In other parts of the same cemetery the dead instead of being placed in a vault were laid upon an area paved with large well burnt bricks and covered with a huge terra-cotta lid. These lids were in several pieces, joined together with reeds soaked in bitumen. We give a section (Fig. 163) and elevation (Fig. 164) of one of these peculiar sepulchres. The whole was about seven feet long, three high, and three wide.

The body of the lid is formed of several rings decreasing in thickness with their distance from the ground. The top is an oval plateau divided into eight symmetrical compartments by flat bands. The skeleton always lies on its side, generally the left, the limbs being drawn up as shown in the engraving (163).

Taylor gives a complete list of the objects found in this tomb together with notes as to their exact position.

Sometimes the covering is more simple in construction and has a domed top (Fig. 165). Elsewhere in the same necropolis

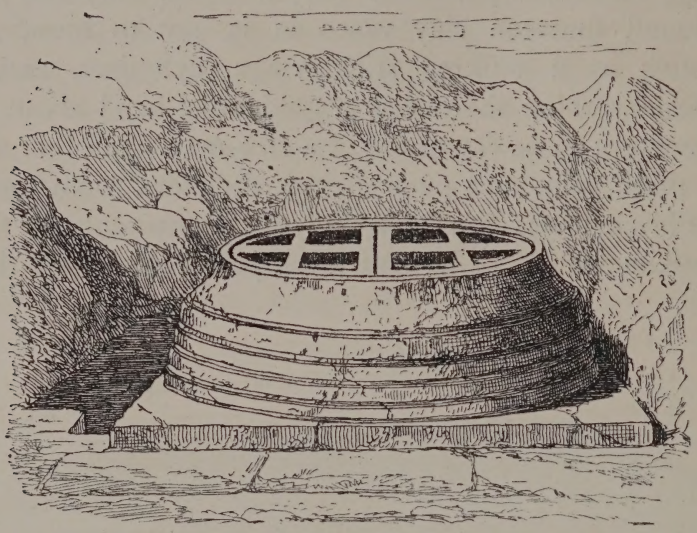


Fig. 164.—Tomb at Mugheir; from Taylor.

numerous examples of a still more elementary form of burial were discovered. The skeletons of children were found between two hollow plates, and full grown bodies in a kind of double vase

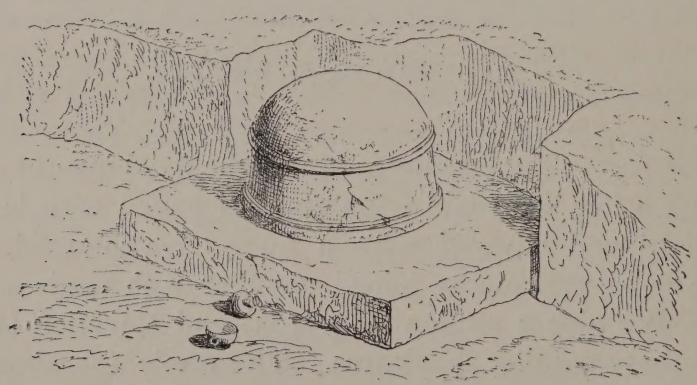


Fig. 165.—Tomb at Mugheir; from Taylor.

into which they could only have been thrust with some difficulty and that after being doubled up. Still more often coffins were of the form shown in our Fig. 166. The diameter of these cylindrical jars was about two feet. The joint between them

was sealed with bitumen. At one end there was a hole to allow the gases generated by decomposition to escape. None of these coffins contained more than one skeleton, but narrow as they were room had been found for the vases and dishes. These were mostly of earthenware, but a few of bronze were also encountered. Each coffin held an arrow-head of the latter material, while the feet and hands of the skeleton were adorned with iron rings. In several cases the remains of gold ornaments, of sculptured ivories and engraved shells, were discovered.

Finally the fashion seems to have changed, and a more elegant form of coffin to have come into use. It was still of terra-cotta, but its surface was covered with a rich glaze originally blue but now mostly of a dark green. Here and there, on the parts shielded best from the atmosphere, the blue has preserved its colour. The general shape of these coffins is that of a shoe or slipper; the

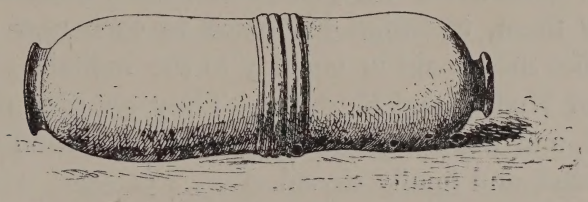


FIG. 166.—Tomb, or coffin, at Mugheir; from Taylor.

oval opening through which the body was introduced has a grooved edge for the adjustment of the lid. The small hole for the escape of gas is at the narrow end. This type seems to date from the last centuries of antiquity rather than from the time of the Chaldæan Empire; its examples are found close to the surface of the cemeteries, whence we may fairly conclude that they were the last accessions. It is still more significant that the images stamped upon the panels with which the lids are decorated have little to remind us of the bas-reliefs of Assyria and Chaldæa, and it is not until we turn to the medals of the Parthians and Sassanids that we find anything to which they can be readily compared.[1]

[1] LOFTUS, *Travels*, &c., pp. 203-4. The British Museum possesses several fine specimens of these glazed-ware coffins. The details given by LOFTUS (chapter xx.), upon the necropolis of Sinkara may be read with interest.

In the cemeteries of Lower Chaldæa the various receptacles for human dust that we have described are heaped vertically one upon another, so that with the passage of time they have formed huge mounds covering vast spaces and rising conspicuously above the plain (see Fig. 167, letter c). Loftus tells us that at Warka he dug trenches between thirty and forty feet deep without reaching the lowest stratum of sepulchres. There was no apparent order in their arrangement. Sometimes brick divisions were found for a certain length, as if used to separate the tombs of one family from those of another. A layer of fine dust, spread evenly by the winds from the desert, separated the coffins. Terra-cotta cones inscribed with prayers had been thrown into the interstices. Sometimes, as at Mugheir, the mound thus formed is surmounted by a paved platform upon which open the drains that traverse the mass.[1] In most cases these mounds have been turned over in all their upper parts by the Arabs. It is probable that in ancient days each of these huge cemeteries had priests and superintendents told off to watch over them, to assign his place to each new comer, and to levy fees like those paid in our day to the mollahs attached to the Mosques of Nedjef and Kerbela. They guarded the integrity of the mound, and when it had reached the regulation height, caused it to be paved and finally closed.

In none of these cemeteries has any tomb been discovered that by its size, richness, or isolation, proclaimed itself the burial place of royalty, and yet the sovereigns of Mesopotamia must have had something analogous to the vast and magnificent sepulchres of the Egyptian kings. Their tombs must at least have been larger and more splendid than those of private individuals. In the case of Susiana we know that it was so through an inscription of Assurbanipal. The Assyrian king gives a narrative of his campaign. He tells us how his soldiers penetrated into the sacred forests and set fire to them, and then to show more clearly with how stern a vengeance he had visited the revolted Elamites, he added: "The tombs both of their ancient and their modern kings, of those kings who did not fear Assur and Istar, my lords, and had troubled the kings, my fathers, I threw them down, I demolished them, I let in the light of the sun upon them, then I carried away their corpses into Assyria. I left their shades with-

[1] See above, p. 158, and fig. 49.

out sepulture and deprived them of the offerings of those who owed them libations." [1]

If the Elamite dynasty had its royal necropolis near Susa, in which funerary rites were celebrated down to the moment of the Assyrian conquest, it could hardly have been otherwise with the powerful and pious monarchies of Chaldæa. History has in fact preserved a few traditions of the royal sepulchres of that country. Herodotus mentions the tomb of that Queen Nitocris to whom he attributes so many great works; [2] it is supposed that she was an Egyptian princess and the wife of Nabopolassar. According to the historian she caused a sepulchral chamber to be constructed for herself in the walls of Babylon, above one of the principal gates. So far as the terms of the inscription are concerned he may have been hoaxed by the native dragomans, but there is nothing to rouse our scepticism in the fact of a tomb having been contrived in the thickness of the wall. At Sinkara Loftus discovered two corbel-vaulted tombs imbedded in a mass of masonry which had apparently served as basement to a temple rebuilt by Nebuchadnezzar. [3]

Some of the Babylonian princes, however, were buried in that part of the Chaldæan territory that was inclosed by the Euphrates and Tigris and contained most of the cemeteries of which we have been speaking. According to Arrian, Alexander, on his way back from Lake Pallacopas, passed close to the tomb of one of the ancient kings, "They say," adds the historian, "that most of the former kings of Assyria were buried among the lakes and swamps." [4]

Loftus suggests that these royal tombs should be sought at Warka, but he found no ruin to which any such character could be certainly assigned. The only mention of a royal Assyrian tomb in history is of a kind that tells us nothing. "Semiramis," says Diodorus, "buried Ninus within the boundary walls of the palace, she raised a mound of extraordinary size over his tomb; Ctesias says it was nine stades high and ten wide. The town stretching

[1] M. Stanislas GUYARD published a translation of this passage in the *Journal asiatique*, for May-June, 1880, p. 514; some terms which had remained doubtful, were explained by M. AMIAUD, in the same journal for August-September, 1881, p. 237.

[2] HERODOTUS, i. 187.

[3] LOFTUS, *Travels*, &c., pp. 248-9.

[4] ARRIAN, *Anabasis*, vii. 22.

to the middle of the plain, near the Euphrates,[1] the funerary mound was conspicuous at many stades' distance like an acropolis; they tell me that it still exists although Nineveh was overthrown by the Medes when they destroyed the Assyrian empire." The exaggerations in which Ctesias indulged may here be recognized. It is impossible to take seriously statements

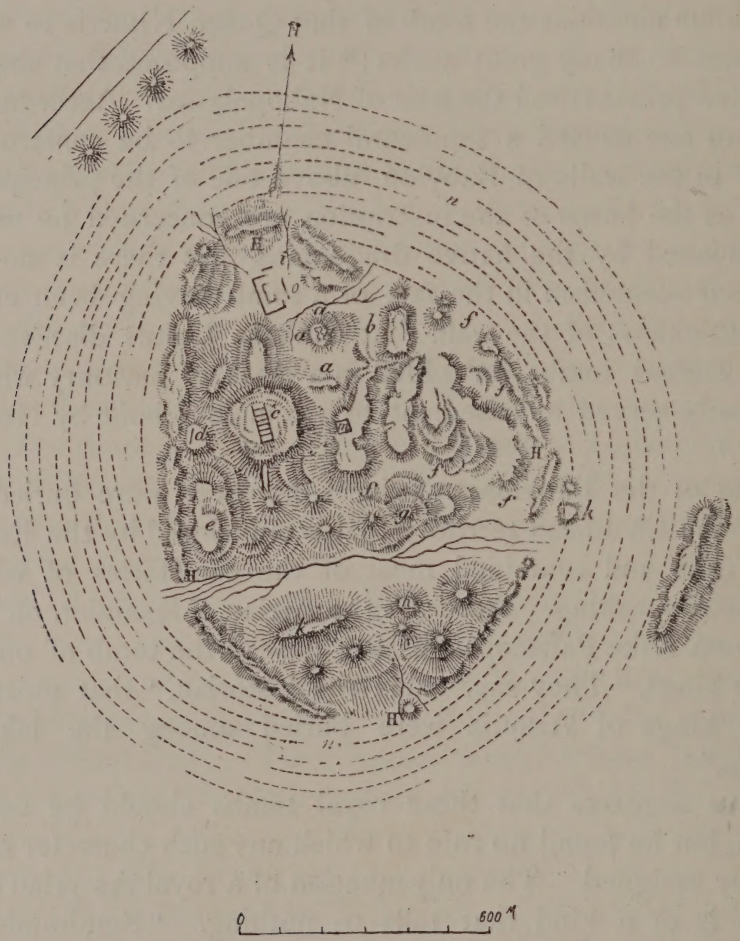


FIG. 167.—Map of the ruins of Mugheir; from Taylor.

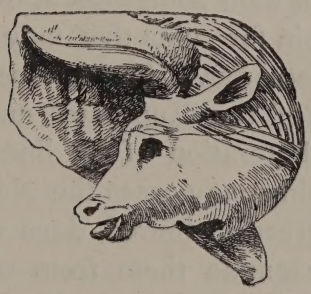
H, H, H, H, circumference of 2,946 yards; *a*, platform of house; *b*, pavement at edge of platform; *c*, tomb mound; *d*, *e*, *g*, *h*, *k*, *l*, *m*, points at which excavations were made; *f*, *f*, *f*, *f*, comparatively open space with very low mounds; *n*, *n*, graves; *o*, the great two-storied ruin.

which make the tomb of Ninus some 5,500 feet high and 6,100 in diameter. The history of Ninus and Semiramis as Ctesias tells it, is no more than a romantic tale like those of the *Shah-Nameh*. All that we may surely gather from the passage in question is

[1] DIODORUS, ii. 7, 1-2.

that, at the time of Ctesias, and perhaps a little later, the remains of a great staged-tower were to be seen among the ruins of Nineveh. The popular imagination had dubbed this the tomb of Ninus, just as one of the great heaps of debris that now mark the site is called the tomb of Jonah.

All that has hitherto been recovered in the way of Mesopotamian tomb architecture is of little importance so far as beauty is concerned, and we may perhaps be blamed for dwelling upon these remains at such length in a history of art. But we had our reasons for endeavouring to reunite and interpret the scanty facts by which some light is thrown on the subject. Of all the creations of man, his tomb is that, perhaps, which enables us to penetrate farthest into his inner self; there is no work of his hands into which he puts more of his true soul, in which he speaks more naïvely and with a more complete acknowledgment of his real beliefs and the bases of his hopes. To pass over the Chaldæan tomb in silence because it is a mediocre work of art would be to turn a blind eye to the whole of one side of the life of a great people, a people whose rôle in the development of the ancient civilization was such as to demand that we should leave no stone unturned to make ourselves masters of their every thought.



CHAPTER IV.

RELIGIOUS ARCHITECTURE.

§ 1.—*Attempts to restore the Principal Types.*

In spite of all our researches we have not succeeded in finding in the whole of Mesopotamia a real sepulchre, a tomb on which the talent of the architect has been lavished as well as the structural skill of the builder. The Chaldæans and Assyrians made greater efforts when they had to honour a god than when they were called upon to provide a lodging for their dead. Of all the structures they raised, their temples seem to have been the most ambitious in height and in grandeur of proportion though not in extent of ground covered. This the classic writers tell us, and their assertions are confirmed in more than one particular by documents written in the Assyrian language. We can also check their statements to some extent by the study of the monuments themselves or rather of their somewhat scanty remains.

We shall seek in vain for ruins that may be compared to those of the Egyptian sanctuaries. The nature of the materials employed in the valley of the Euphrates made the degradation of a building and the obliteration of its lines far more rapid than elsewhere. And yet in many cases the almost formless aspect of structures once so greatly admired, does not prevent those who know how to crossexamine them from restoring many of their former arrangements; and both in the bas-reliefs and in some very small monuments we find certain sculptured sketches that have been recognized as representing temples.

These sketches are very imperfect and very much abridged; the ruins themselves are confused; of the Greek and Assyrian texts some are short and vague, others excite our scepticism.

Without wishing to deny the value of the methods employed or the importance of the results obtained, we can hardly believe that the certainty with which technical terms are translated is well founded. There are some of these terms which if they occurred in a Greek inscription would cause no little embarrassment by their purely special character, and that even to one who might unite in his single person the qualifications of a Greek scholar with those of an architect or sculptor. We hope, though we hardly expect to see our hope realized, that some day a Mesopotamian temple may be found in good preservation. Until then we cannot give to our restorations of such buildings anything approaching the accuracy or completeness so easily attained when the great religious edifices of Greece or Egypt are in question. We find none of those well defined elements, those clear and precise pieces of information which elsewhere allow us to obliterate the injuries worked by time and human enemies. The foot of every wall is heaped about with such formless masses of brick and brick dust, that it is almost impossible to make full explorations or to take exact measurements. One must be content with an approximation to the truth.

With the one exception of the staged tower at Khorsabad, we shall not attempt to give a single restoration in the proper sense of the word. Not that we mean to say that the different temple models given in our Plates II., III., and IV., and in our Fig. 173, are creations of our fancy. No one of the four pretends to reconstruct one famous building more than another. They are abstract types, each representing, in its general features, one of the varieties into which Assyro-Chaldæan temples may be divided. The arrangements in which the originality of each type consists were only fixed by M. Chipiez after long researches. In each case he has taken for his point of departure either a Greek or Assyrian text, a sculptured relief, or facts gleaned by the examination of original sites; in most cases he has been able to supplement and correct the information gained from one of these sources by that from another. He has thus entered into the spirit of Mesopotamian architecture, and restored the chief forms it put on in its religious buildings according to time and district. He cannot say that all the details figured were found united, as they may be here, on a single building; but they are not inventions, no one of them is without authority, and the use to which they are put has been

decided by the examination of actual remains. We may say the same of proportions. These are the result of study and of the collation of one ruin and one piece of evidence with another; they have not been taken from any single building. Finally there were certain details, such as the trace and elevation of the ramps, that were full of difficulty. M. Chipiez arrived at the solution finally adopted by an inductive process, by carefully weighing the obvious conditions of the problem and choosing those arrangements by which its requirements seemed most simply and conveniently met. In virtue of their general character M. Chipiez's restorations reach a high degree of probability. They may be compared, if we may use the expression, to those triumphs of historical synthesis in which no attempt is made to narrate events as they occurred and in all their details, but in which a whole people lives, and the character of a whole century is summed up, in a picture whose every line and colour is borrowed from reality.[1]

In spite of their apparent variety, all the buildings we shall describe in the present chapter may be referred to a single fundamental type. They are each formed of several cubic masses superimposed one upon another and diminishing in volume in proportion to their height in the monument. We have already explained how such a system came to be adopted.[2] It was determined by the limitations of the only material at the architect's disposal, and it had at least this advantage, that it enabled him to relieve the monotony of the Chaldæan plains with artificial mountains whose vast size and boldness of line were calculated to impress the minds of the people, and to give them a great idea of their master's power and of the majesty of the deities in whose honour they were raised.

Mesopotamia was covered, then, by buildings resembling a stepped pyramid in their general outlines. We find them in the reliefs (Fig. 10), and in the oldest cities we can frequently recognize the confused ruins of their two or three lower stories. Our only doubt is connected with the possible use of these buildings, the *zigguratts* of the Assyrian texts. We shall not here stop to recapitulate the evidence in favour of their religious character; it will suffice to quote the description given by Herodotus of the temple

[1] These restorations of the principal types of Chaldæan temples were exhibited by M. Chipiez in the Salon of 1879, under the title *Tours à Étages de la Chaldée et de l'Assyrie.*

[2] Chapter II. § 2.

FIG. 168.—View of the Birs Nimroud ; after Felix Thomas.

of Bel or Belus at Babylon. As to whether the ruins of that building are to be identified with *Babil* (Fig. 37) or the *Birs-Nimroud* (Fig. 168) we shall inquire presently. This is the description of Herodotus :—

" In the other (fortress) was the sacred precinct of Jupiter Belus, a square inclosure two furlongs each way with gates of solid brass ; which was also remaining in my time. In the middle of the precinct there was a tower of solid masonry, a furlong in length and breadth, upon which was raised a second tower, and on that a third, and so on up to eight. The ascent to the top is on the outside, by a path which winds round all the towers. When one is about half way up one finds a resting-place and seats, where persons are wont to sit some time on their way to the summit. On the topmost tower there is a spacious temple, and inside the temple stands a couch of unusual size, richly adorned with a golden table by its side. There is no statue of any kind set up in the place nor is the chamber occupied of nights by any one but a single native woman. . . . Below in the same precinct there is a second temple, in which is a sitting figure of Jupiter all of gold . . . . outside the temple are two altars." [1]

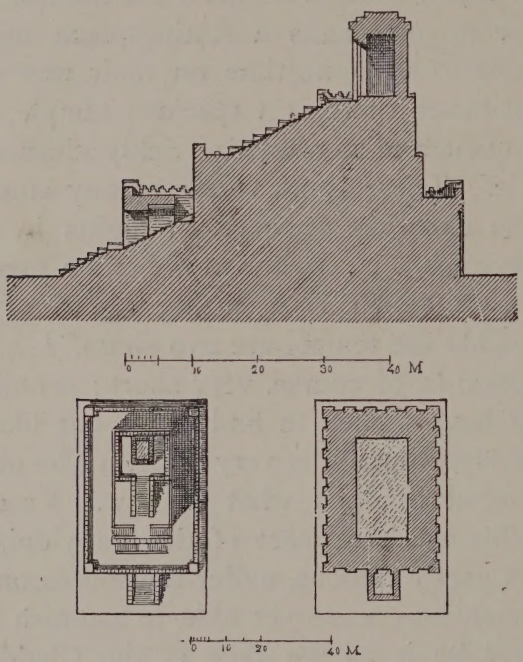
This description is, of course, very short ; it omits many details that we should have wished to find in it ; but like nearly all the descriptions of Herodotus it is very clear. The old historian saw well, and his mind retained what he saw. From his recital it is plain that this was the finest of the Babylonian temples, and that even when partly ruinous, under the successors of Alexander, its colossal dimensions were yet able to astonish foreign visitors. We may, then, take it as the type of the Chaldæan temple, as the finest religious building in the first city of Mesopotamia. Nebuchadnezzar reconstructed it and made it higher and richer in its ornamentation than before, but he kept to the ancient foundations and made no change in the general character of the plan. In this single edifice were gathered up all the threads of a long tradition ; it was, as it were, the supreme effort, the last word of the national art : and Herodotus declares plainly that it was a staged tower.

Such an assertion puts the matter beyond a doubt, and enables

[1] HERODOTUS, I, 181-3, Rawlinson's version. By Jupiter, or rather Zeus, we must understand Bel-merodach. Diodorus calls the god of the temple Zeus Belus.

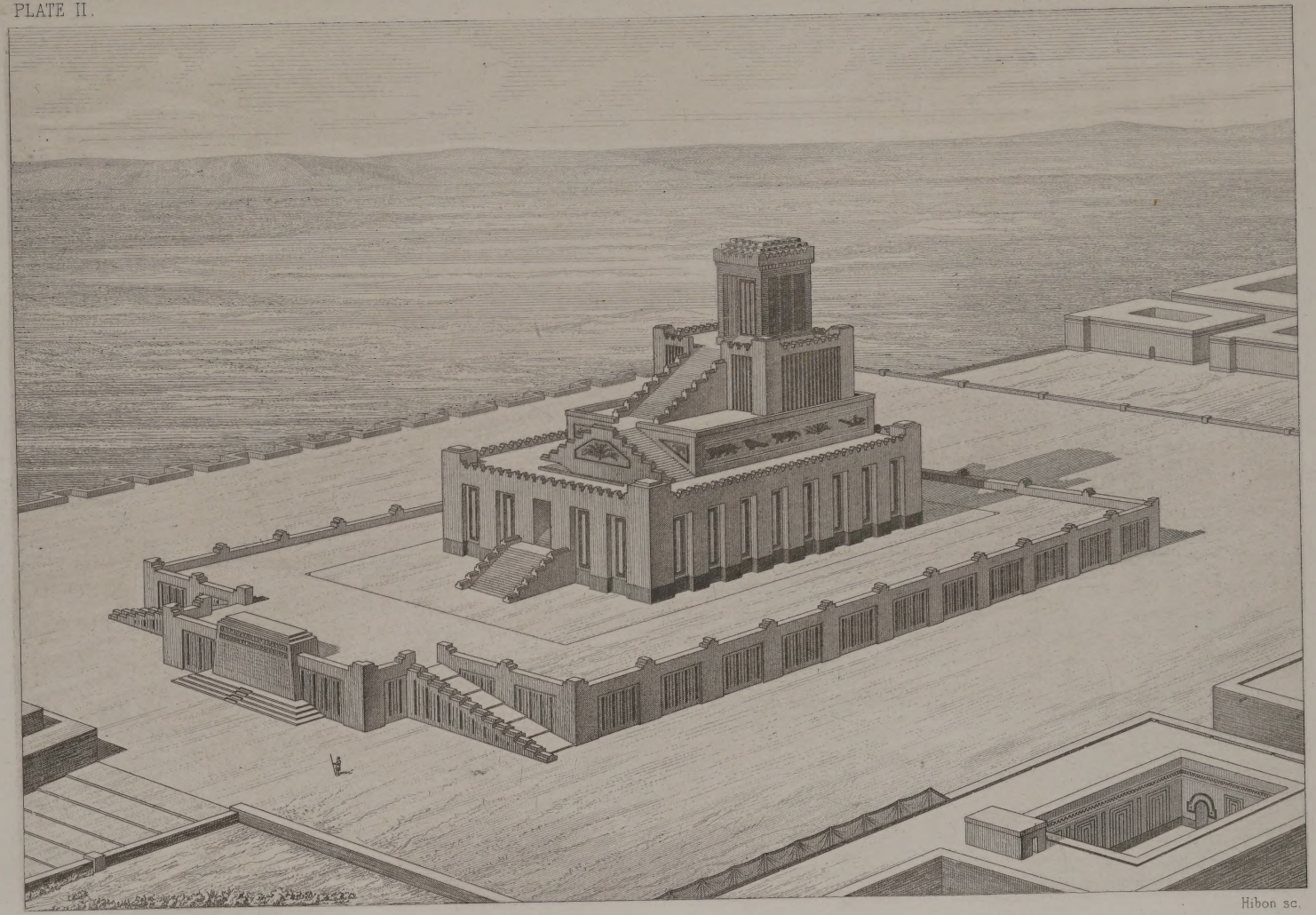
us to point to the staged tower as the form chosen by these people and made use of throughout their civilization for the buildings raised in honour of their gods. And having dismissed this fundamental question we have now to give a rapid description of the principal varieties of the type as they have been established by M. Chipiez. And as we go on we shall point out the authorities for each restoration; whether the ruins themselves, the inscribed texts, or the sculptured reliefs.

In the first line we must place the Rectangular Chaldæan Temple (Plate II. and Figs. 169, 170, and 171). We have put



Figs. 169—171.—Longitudinal section, plan and horizontal section of the rectangular type of Chaldæan temple.

it first because the remains from which it has been reconstructed have all been found in Lower Chaldæa, that is, amongst the oldest of the Chaldæan cities. As we learn from the texts, these temples were repaired under the last kings of Babylon, and it was their antiquity that made them dear both to the people and their kings. We may believe, therefore, that in restoring them care was taken to preserve their ancient features. It would be the upper part of their retaining walls that required renewal, and these would be rebuilt on their ancient foundations. Here and there the latter exist even at the present day, and



Ch. Chipiez del.

Hibon sc.

RECTANGULAR CHALDÆAN TEMPLE

Restored by Ch. Chipiez

the names of the earliest Chaldæan princes may be read upon their bricks.[1]

The remains studied by Messrs. Taylor and Loftus at Warka (Fig. 172), Abou-Sharein, and Mugheir have furnished the chief elements for our restoration, which bears a strong resemblance to the ruin at Warka called Bouvariia (A on the map), and one still stronger to that temple at Mugheir whose present

FIG. 172.—Map of Warka with its ruins; from Loftus.

A, Bouvariia; B, Wuswas; C, ruin from the Parthian epoch; D, building decorated with coloured cones (see page 279).

state is shown in our Figs. 48 and 143. This first type is characterized by the form of its lower, and the situation of its upper, stages. The latter are not placed in the centre of the platform on which they stand; they are thrown back much nearer to one of the two shorter sides than to the other, so

[1] LOFTUS, *Travels*, &c., p. 131. See also TAYLOR'S papers in vol. xv. of the *Royal Asiatic Society's Journal*.

that the building has a front and a back. The front is almost entirely taken up with wide staircases.[1] The staircase leading from the first story to the second must alone have been concealed in the interior of the building, an arrangement which avoided the necessity for breaking up the ample solidity of that imposing stage (see Plate II.).

The surroundings of the temple in our plate—the background of slightly undulating plain, the houses similar to those found by Taylor and Loftus, in which they discovered vaulted passages traversing the thickness of the walls[2]—are, of course, purely imaginary.

The temple itself, like the palace at Khorsabad, was raised on a vast platform upon which the city walls abutted. This platform was reached by wide flights of steps.[3] Lateral ramps led to a second platform, inclosed on every side, with which the sacred part of the building, the Haram, began. We have already spoken of the panelled ornament with which the great, flat surfaces of its walls were relieved.[4] The lowest stage of the temple was provided with buttresses like those that still exist in the temple of Mugheir (Fig. 43). A high, rectangular plinth—decorated in our restoration with glazed faïence[5]—was interposed between the first and second stage.[6] A rectangular chapel decorated, in all probability, with metal plaques and glazed polychromatic bricks, crowned the whole. Traces of this chapel have been found at Mugheir, and the wealth of its decoration is attested by many pieces of evidence.[7] At Abou-Sharein also there are vestiges of a small and richly ornamented sanctuary crowning the second stage of a ruin whose aspect now bears a distinct resemblance to that of the temple at Mugheir. The

[1] LOFTUS, (p. 129). "It rather struck me, however, from the gradual inclination from top to base, that a grand staircase of the same width as the upper story, occupied this side of the structure."

[2] LOFTUS, *Travels*, &c., p. 133.

[3] At Warka, around the ruin called *Wuswas* by the Arabs, LOFTUS traced the plan of these great courtyards and platforms (*Travels*, p. 171).

[4] See above, p. 246, figs. 100 and 102.

[5] Numerous pieces of glazed tile were found in these ruins.

[6] The idea of this plinth was suggested to M. Chipiez by a remark made on page 129 of LOFTUS'S *Travels*: "Between the stories is a gradual stepped incline about seven feet in perpendicular height, which may however, be accidental, and arise from the destruction of the upper part of the lower story."

[7] See TAYLOR, *Journal*, &c., pp. 264-5.

triple row of crenellations we have given to this sanctuary or chapel was suggested by the altars and obelisks (Fig. 107 and 111). Here, as at Nineveh, these battlements must have been the one universal finish to the walls. The use to which we have put them is quite in harmony with the spirit of Mesopotamian architecture, but there is no direct evidence of their presence in these buildings. In this particular our restoration is conjectural.

A glance at our longitudinal section (Fig. 169) will show that we have left the main body of this great mass of sun-dried brick absolutely solid. It was in vain that, at Mugheir, trenches and shafts were cut through the flanks of the ruin, not a sign of any apartment or void of the most elementary kind was found.[1]

This Mugheir temple rises hardly more than fifty feet above the level of the plain. The restoration by M. Chipiez, for which it furnished the elements, shows a height of 135 feet; judging from the proportions of its remains the building can hardly have been higher than that. But it is certain that many temples reached a far greater height, otherwise their size could not have made any great impression upon travellers who had seen the Egyptian pyramids. Even now the Birs-Nimroud, which has been undergoing for so many centuries a continual process of diminution, rises no less than 235 feet above the surrounding country,[2] and Strabo, the only Greek author who says anything precise as to the height of the greatest of the Babylonian monuments, writes thus: "This monument, which was, they say, overthrown by Xerxes, was a square pyramid of burnt brick, one stade (606¾ feet) high, and one stade in diameter."[3]

The arrangement by which such a height could be most easily reached would be the superposition of square masses one upon another, each mass being centrally placed on the upper surface of the one below it. The weight would be more equally divided and the risks of settlement more slight than in any other system. Of this type M. Chipiez has restored two varieties. We shall first describe the simpler of the two, which we may call the

[1] LOFTUS, *Travels*, p. 130. It was the same with the *Observatory* at Khorsabad.

[2] LAYARD, *Discoveries*, p. 495.

[3] The authorities made use of by Strabo for his description of Babylon, all lived in the time of Alexander and his successors; no one of them could have seen the temple intact and measured its height. Founded upon tradition or upon the inspection of the remains, the figure given by the geographer can only be approximate. I should think it is probably an exaggeration.

square single-ramped Chaldæan temple (Figs. 173, 174, 175, 176).

The principal elements for this restoration have been taken from the staged tower at Khorsabad known as the *Observatory*, but M. Chipiez has expanded its dimensions until they almost reach those ascribed to the temple of Bel by Strabo. Moreover, he had to decide a delicate question which the discovery of the Khorsabad *Observatory*, where only the four lower stages remained, had done nothing to solve, namely the plan and inclination of the ramp. In M. Thomas's restoration of the Khorsabad tower, the last section of the ramp at the top, is parallel to that at the bottom, and the crowning platform is not exactly upon the central axis of the building.[1] In M. Chipiez's restoration the top platform is in the centre, like those below it, and the upper end of his ramp is vertically over the spot where it leaves the ground. This result has been obtained by a peculiar arrangement of the inclined plane which must have been known to the Mesopotamian architects, seeing how great was their practice and how desirable, in their eyes, was the symmetrical aspect which it alone could give. We have suggested the varied colours of the different stages by changes of tone in our engraving. In spite of the words of Herodotus M. Chipiez has only given his tower seven stages, because that number seems to have been sacred and traditional, and Heredotus may very well have counted the plinth or the terminal chapel in the eight mentioned in his description. Bearing in mind a passage in Diodorus—"At the summit Semiramis placed three statues of beaten gold, Zeus, Hera, and Rhea"[2]—we have crowned its apex with such a group. The phrase of Heredotus, "Below . . . . there is a second temple," has led us to introduce chapels contrived in the interior of the mass and opening on the ramp at the fifth and sixth stories. There is nothing to forbid the idea that such chambers were much more numerous than this, and opened, sometimes on one, sometimes on another, of the four faces.

The buildings at the lower part of our engraving are imaginary, but they are by no means improbable. Among them may be distinguished the wide flights of steps and inclined planes by

[1] See Place, *Ninive*, vol. iii, plate 37.

[2] Diodorus, II, 9, 5.

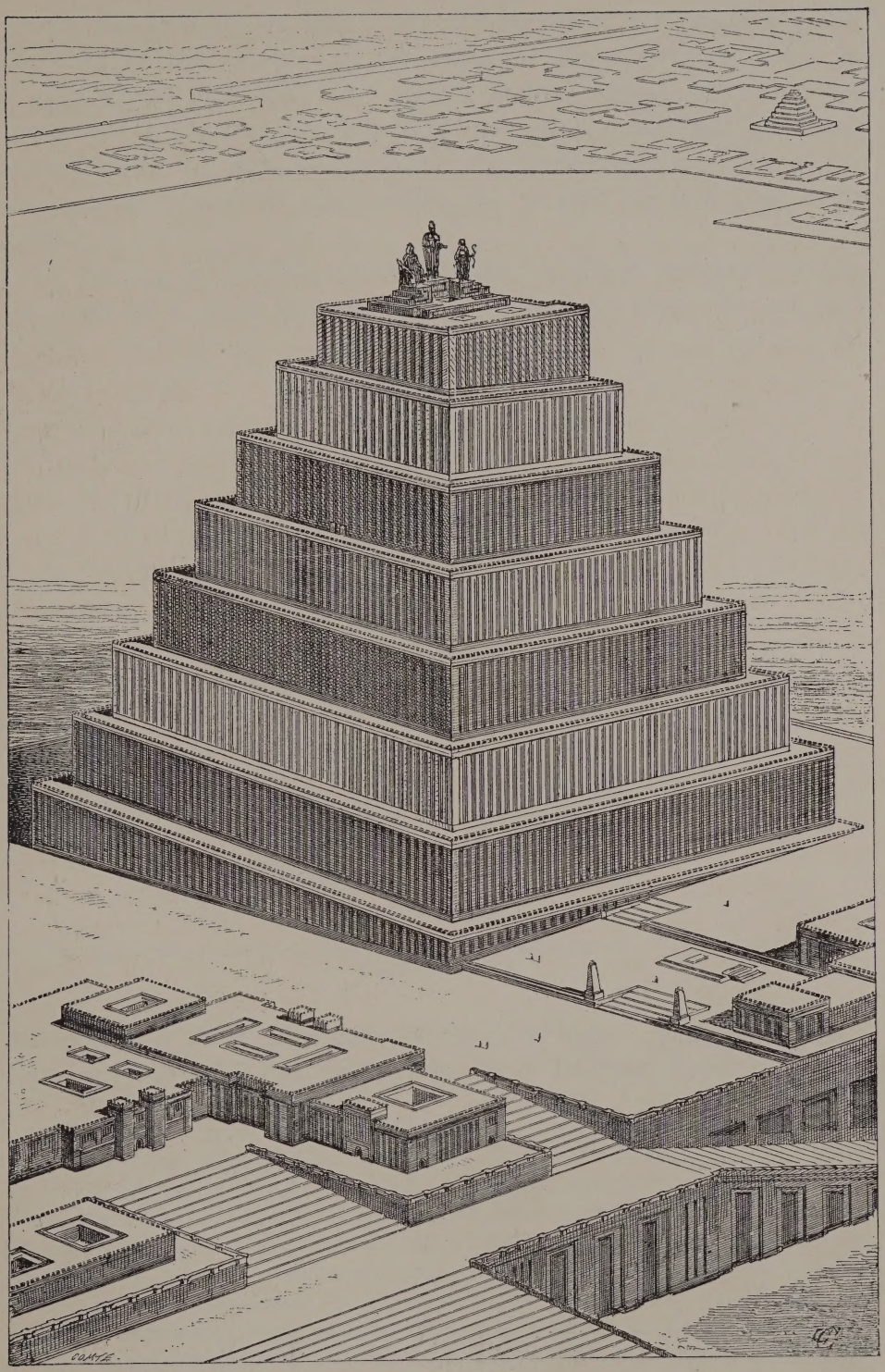
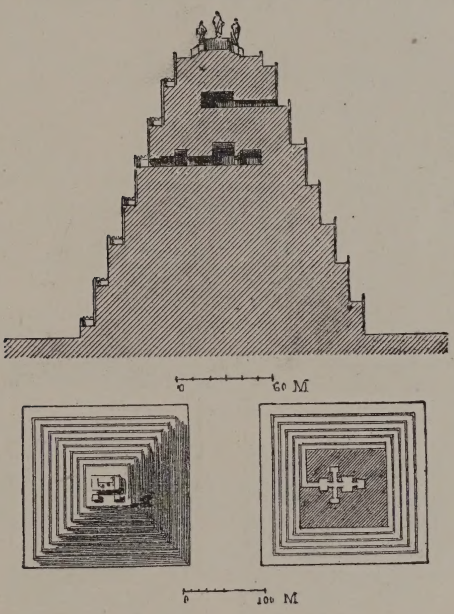


FIG. 173.—Type of square, single-ramped Chaldæan temple. Compiled by Ch. Chipiez.

which the platform on which the temple stood was reached.[1] At the foot of the temple on the right of the engraving there is a palace, on the left two obelisk-shaped steles and a small temple of a type to be presently described. Behind the tower stretch away the waters of a lake. Nebuchadnezzar, in one of his inscriptions, speaks of surrounding the temple he had built with a lake.

In seeking to vary the effect produced by these external ramps, the idea of a more complicated arrangement than the one last

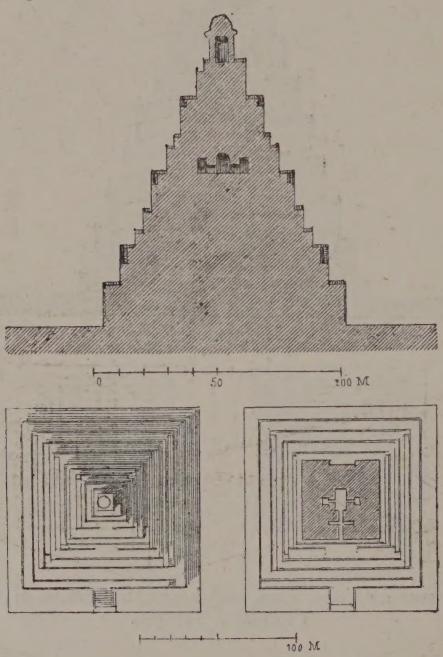


FIGS. 174—176.—Transverse section, plan, and horizontal section of a square, single-ramped, Chaldæan Temple.

noticed may have occurred to the Chaldees. This M. Chipiez has embodied in his restoration of a SQUARE DOUBLE-RAMPED

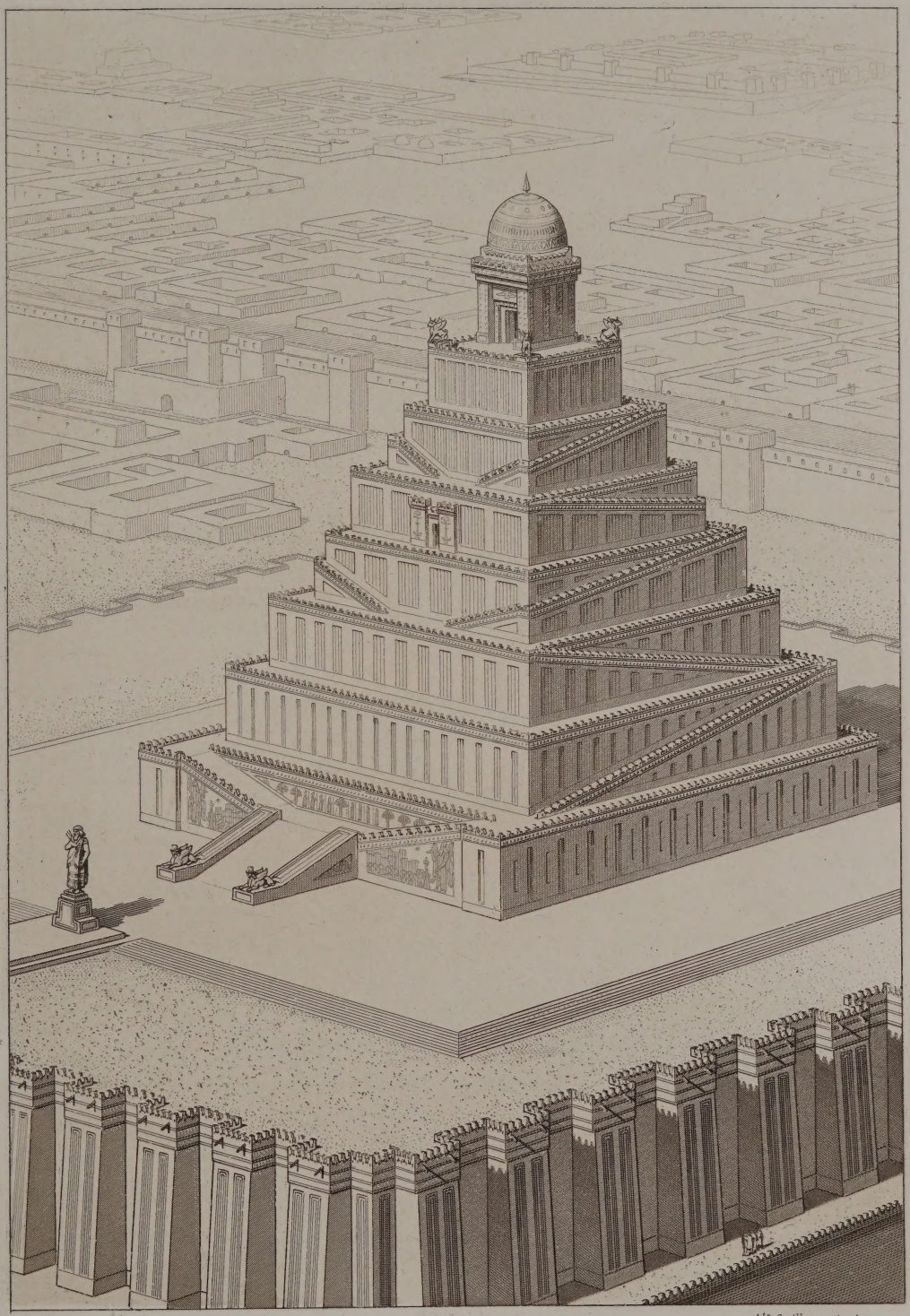
[1] These courts must have been at certain times of the day the meeting place of large numbers of the population, like the court-yards of a modern mosque. Shops in which religious emblems and other *objèts-de-piété* were sold would stand about them, just as in the present day the traveller finds a regular fair in the courtyard of the mosque *Meshed-Ali*. Among the commodities that change hands in such places, white doves are very common (LOFTUS, *Travels*, p. 53). In this perhaps, we may recognize the survival of a pagan rite, the sacrifice of a dove to the Babylonian Istar, the Phœnician Astarte, and the Grecian Aphrodite. It was in the courtyards of one of these temples that those sacred prostitutions of which HERODOTUS speaks, took place (i. 199). The great extent of the inclosures is readily explained by the crowds they were then required to accommodate.

Chaldæan Temple (Plate III. and Figs. 177, 178, and 179). As in the last model, there are seven stages, each stage being square on plan, but the difference consists in the use of two ramps leading from base to summit. Each of these keeps to its own side of the building, only approaching the other on the front and back façades at the fourth, fifth, and sixth stages (see Plate III). In order that the building as a whole should have a symmetrical and monumental appearance, it was necessary that all its seven stages—with the exception of the first, to which a rather different *rôle* was assigned—should be of equal height. But their length



Figs. 177—179.—Transverse section, plan, and horizontal section of a square, double-ramped Chaldæan Temple.

and width differed in proportion to their height in the building. The continual shortening of the distance within which the incline had to be packed, would, if we suppose each ramp confined to one side of the tower, have required the slope to become steeper with each story. Such a want of parallelism would have been very ugly, and there was but one means of avoiding it, and that was to continue the ramps nearly to the centre of the front at the fourth and sixth stages, and to the centre of the posterior façade at the fifth. The advantages of such an arrangement are obvious. Banished mostly to the flanks the double ramp left four stages



Ch. Chipiez del.

Ate Guillaumot père sc.

CHALDÆAN TEMPLE

SQUARE ON PLAN AND WITH DOUBLE RAMP

Restored by Ch. Chipiez

Imp. Ch. Chardon

clear both at front and back, providing an ample promenade. On the other three it showed itself just sufficiently to "furnish" the building and diversify its aspect without in any way encumbering it. The whole structure terminated in a chapel placed on the central axis of the tower, and surmounted by a cupola. The inscriptions mention the dome covered with leaves of chiselled gold which crowned at Babylon that temple "to the foundations of the earth" which was restored by Nebuchadnezzar.[1]

In these texts another sanctuary included in the same building and placed half way between the base and summit is mentioned. This was the sepulchral chamber of Bel-Merodach in which his oracle was consulted; in M. Chipiez's restoration the entrance to this sanctuary is placed in the middle of the fifth story.

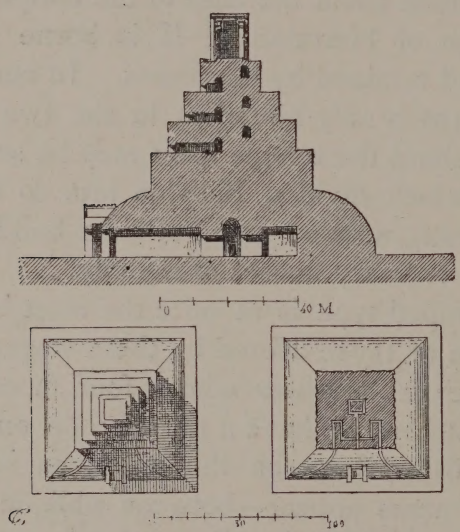
The vast esplanade about the base of the temple was suggested by the description of Herodotus. It is borne by two colossal plinths flanked and retained by buttresses. In our plate the lower of these two plinths is only hinted at in the two bottom corners. In the distance behind the temple itself may be seen one of those embattled walls which divided Babylon into so many fortresses, and, still farther away, another group of large buildings surrounded by a wall and the ordinary houses of the city.

This double-ramped type is at once the most beautiful and the most workmanlike of those offered by these staged towers. With a single ramp we get a tower whose four faces are repetitions of each other, but here we have a true façade, on which a happy contrast is established between the unbroken stages and those upon which the ramps appear—between oblique lines and lines parallel with the soil. The building gains in repose and solidity, and its true scale becomes more evident than when the eye is led insensibly from base to summit by a monotonous spiral.

We cannot positively affirm that the architects of Mesopotamia understood and made use of the system just described; there

[1] "I undertook in Bit-Saggatou," says the king, "the restoration of the chamber of Merodach; I gave to its cupola the form of a lily, and I covered it with chiselled gold, so that it shone like the day," London inscription, translated by M. Fr. LENORMANT, in his *Histoire ancienne*, vol. ii. pp. 228-229. See also a text of Philostratus in his life of *Apollonius of Tyana*, (i. 25). The sophist who seems to have founded his description of Babylon on good information, speaks of a "great brick edifice plated with bronze, which had a dome representing the firmament and shining with gold and sapphires."

is no positive evidence on the point.[1] It contains, however, nothing but a logical development from the premises, nothing but what is in perfect keeping with Mesopotamian habits, nothing that involves difficulties of execution or construction beyond those over which we know them to have triumphed. Besides, we have proofs that they were not content to go on servilely reproducing one and the same type for twenty centuries; their temples were not all shaped in the same mould. The type of the Mugheir temple differed sensibly from that of the Khorsabad *Observatory*. One of the Kouyundjik sculptures reveals a curious variant of the traditional theme, so far as Assyria was concerned, in an arrangement of the staged tower that we should never have suspected but

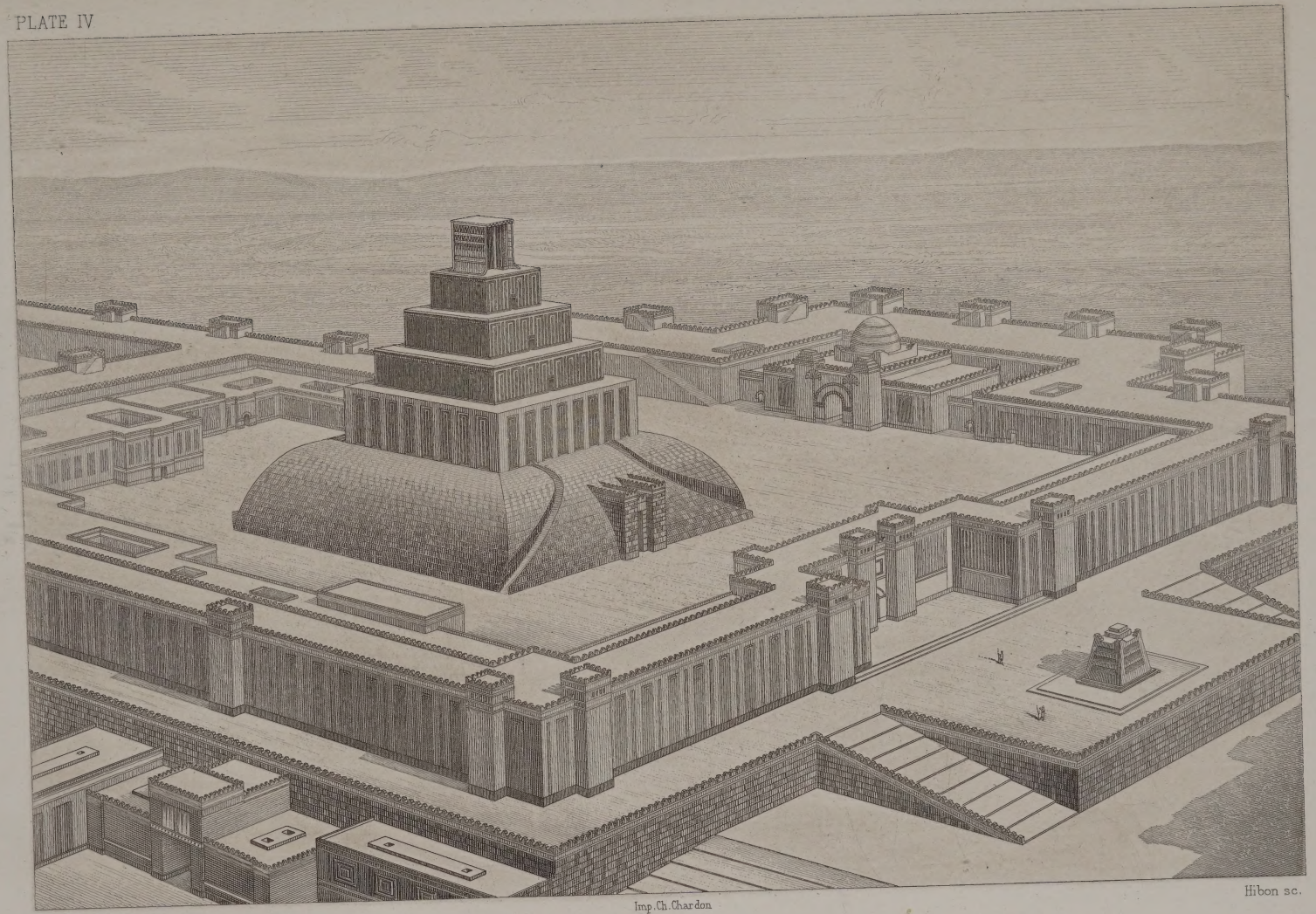


FIGS. 180—182.—Square Assyrian temple. Longitudinal section, horizontal section and plan.

for the survival of this relief (Fig. 34). The picture in question is no doubt very much abridged and far from true to the proportions of the original, but yet it has furnished M. Chipiez with the elements of a restoration in which conjecture has had very little to say. This we have called the SQUARE ASSYRIAN TEMPLE (see Plate IV. and Figs. 180-182).

[1] The idea has also occurred to M. OPPERT of restricting the ramp to two sides of the tower, to the exclusion of the others (*Expedition scientifique*, vol. i. p. 209); but so far as we understand his system—which he has not illustrated with any figure—he does not double his incline, he merely alternates its side at each stage, so that part of it would be on the north-west, part on the south-west face of his tower.

PLATE IV



Ch. Chipiez del.

Imp. Ch. Chardon

Hibon sc.

SQUARE ASSYRIAN TEMPLE

Restored by Ch Chipiez

According to the relief the tower itself rises upon a dome-shaped mound in front of which there are a large doorway and two curved ramps. From all that we know of Assyrian buildings of this kind we may be sure that the original of the picture was so placed. The form of the mound may be described as reproducing the extrados of a depressed arch. This is the only form on which flights of steps with a curve similar to that here shown could be constructed. The design of the steps in our plate corresponds exactly to that indicated more roughly by the sculptor; no other means of affording convenient access to the base of the tower—at least outside the mound—could have been contrived. Two doors were pierced at the head of the steps through the large panels with which the lower stage of the tower itself was decorated, and from that point, so far as we can tell from the relief, the ascent was continued by means of internal staircases. The sculptor has only shown three stages, but—unless the absence of anything above has been caused by the mutilation of the slab—we may suppose that he has voluntarily suppressed a fourth.[1] In any case the third story is too large to have formed the apex of the tower. The general proportions suggest at least one more stage for the support of the usual chapel. The latter we have restored as a timber structure covered with metal plates, skins, or coloured planks. The three stages immediately below the chapel we have decorated with painted imitations of panels, carried out either in fresco or glazed brick. As for the internal arrangements we know very little. The great doorway with which the mound itself is prefaced in the relief must have led to some apartment worthy of its size and importance; we have therefore pierced the mass in our section with a suite of several chambers. At the second story another doorway occurs; it is much smaller and more simple, and the chamber to which it led must have been comparatively unimportant. In our Fig. 180 it is restored as the approach to the internal staircase.

In order to vary the framework of our restorations and to show Assyrian architecture in as many aspects as possible, we have placed this temple within a fortified wall, like that of Khorsabad. Within a kind of bastion towards the left of the

[1] The original of this relief has not been brought to Europe. We are therefore unable to decide whether Layard's draughtsman has accurately represented its condition or not.

plate we have introduced one of those small temples of which remains have been found at Khorsabad and Nimroud. The walls of the town form a continuation of those about the temple. In front of the principal entrance to the sacred inclosure we have set up a commemorative stele.

Aided by these restorations we hope to have given a clearer and more vivid idea of Chaldæan art than if we had confined ourselves to describing the scanty remains of their religious buildings. We have now to give a rapid review of those existing ruins whose former purposes and arrangements may still to a certain extent be traced.

§ 2. *Ruins of Staged Towers.*

In describing the first of our four types we had occasion to point to the buildings at Warka and Mugheir, which enabled us to restore what may be called the Lower Chaldæan form of temple. The mounds formed by the remains of those buildings had not been touched for thousands of years, they had entirely escaped such disturbance as the ruins of Babylon have undergone for so many centuries at the hand of the builders of Bagdad and Hillah; and it is probable that explorations carried on methodically and with intelligent patience would give most interesting results. If, for instance, the foundations of all walls were systematically cleared, we should be enabled to restore with absolute certainty the plans of the buildings to which they belonged. To the monuments discovered by the English explorers we must now add a find made by M. de Sarzec at Tello, of which, however, full details have yet to be furnished.[1] We take the following from the too short letter that was read to the Academy of Inscriptions on the 2nd of December 1881. "Finally, it was in that part of the building marked H that opens upon the court B that I found the curious structure of which I spoke to you. This solid mass of burnt brick and bitumen, with diminishing terraces rising one above

[1] See *Les Fouilles de Chaldée* in the *Revue archéologique* for November, 1881. M. de Sarzec refers us in his paper to a plan which has not yet been laid before the Academy. We regret very much that its publication should have been so long delayed, as we have been prevented from making as much use as we should have wished of M. de Sarzec's architectural discoveries.

the other, reminds us of those Chaldæo-Babylonian structures whose probable object was to afford a refuge to the inhabitants from the swarms of insects and burning winds that devastate these regions for nine months of the year." Here, we believe, M. de Sarzec is in error ; the only refuges against the inflamed breath of the desert were the *serdabs*, the subterranean chambers with their scanty light and moistened walls, and the dark apartments of Assyrian palaces with their walls of prodigious thickness. The great terraces erected at such a vast expenditure of labour were

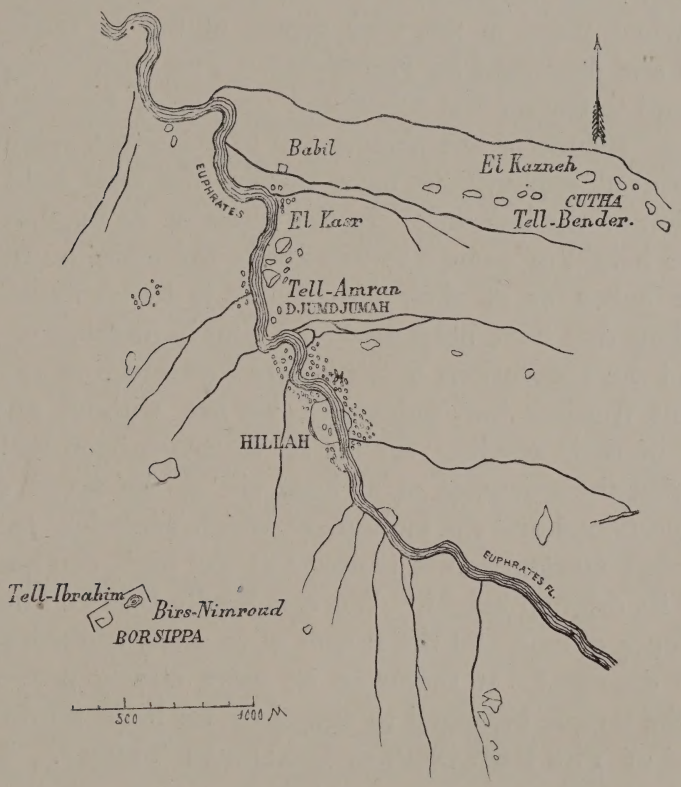


FIG. 183.—Map of the ruins of Babylon ; from Oppert.

not undertaken merely to escape the mosquitoes ; we may take M. de Sarzec's words, however, as a proof that at Sirtella as in all the towns of Lower Chaldæa, the remains of a building with several stories or stages are to be recognized.

The ruins on the site of Babylon may be divided into four principal groups, each forming small hills that are visible for many miles round ; they are designated on the annexed map by the names under which they are commonly known. These are, in

their order from north to south, *Babil*, *El-Kasr* (or *Mudjelibeh*) and *Tell-Amran*, on the left bank; on the right bank the most conspicuous of them all, the *Birs-Nimroud*.[1] Most of those who have studied the topography of Babylon are disposed to see in the Kasr and in Tell-Amran the remains of a vast palace, or rather of several palaces, built by different kings, and those of the famous hanging gardens; while in Babil (Plate I. and Fig. 37) and the Birs Nimroud (Fig. 168) they agree to recognize all that is left of the two chief religious buildings of Babylon. Babil would be the oldest of them all—the *Bit-Saggatu* or "temple of the foundations of the earth" which stood in the very centre of the royal city and was admired and described by Herodotus. The Birs-Nimroud would correspond to the no less celebrated temple of Borsippa, the *Bit-Zida*, the "temple of the planets and of the seven spheres."

At Babil no explorations have thrown the least light upon the disposition of the building. In the whole of its huge mass, which rises to a height of some 130 feet above the plain, no trace of the separate cubes or of their dimensions is to be found. All the restorations that have been made are purely imaginary. At Birs-Nimroud the excavations of Sir Henry Rawlinson in 1854 were by no means fruitless but, unhappily, we are without any detailed account of their results. So far as we have been told, it would appear that the existence of at least six of the seven stages had been ascertained and the monument, which, according to Sir Henry Rawlinson's measurements, is now 153 feet high, can have lost but little of its original height. We can hardly believe however, that the violence of man and the storms of so many centuries have done so little damage.[2] It seems to be more clearly proved that, in shape, the temple belonged to the class we have described under the head of The Rectangular Chaldæan Temple. The axis of

[1] The clearest and most precise information upon the topography of Babylon is to be found in Professor Rawlinson's essay on that subject in the second volume of his translation of Herodotus (p. 570, in the third edition).

[2] In making his calculations, Professor Rawlinson has certainly forgotten to take into account the pier or section of wall that still stands upright upon the surface of the mound (Oppert, *Expédition scientifique*, vol. i. pp. 260, *et seq.*). It is clearly shown in our figure—Sir Henry Layard leaves us in no doubt on this score: "The Birs-Nimroud rises to a height of 198 feet, and has on its summit a compact mass of brickwork thirty-seven feet high by twenty-eight broad, the whole being thus 235 feet in perpendicular height," *Discoveries*, p. 495. Layard says, however, that the dimensions here given were taken from Rich, as he had no time to take measurements during his hurried visit.—Ed.

[3] *Discoveries*, p. 495.

the temple, the vertical line upon which the centre of the terminal chapel must have been placed, was not at an equal distance from the north-western and south-eastern sides, so that the building had its gentlest slope—taking it as a whole—towards the south-east.[1] On that side the cubical blocks of which it was composed were so placed as to leave much wider steps than on the north-west. The temple therefore had a true façade, in front of which propylæa, like the one introduced in our restoration from the ruins at Mugheir, were placed. The difference consists in the fact that here the stages are square on plan. The lowest stage was 273 feet each way ; it rested upon a platform of sun-dried brick which rose but a few feet above the level of the plain.

Supposing these measurements to be exact they suggest a building which was nothing extraordinary either in height or mass. The dimensions furnished by Rich and Ker-Porter are much greater. Both of these speak of a base a stade, or about 606 feet, square, which would give a circumference of no less than 2,424 feet—not much less than half a mile. In any case the temple now represented by Babil must have been the larger of the two. M. Oppert mentions 180 metres, or about 600 feet, as one diameter of the present rather irregular mass. That would still be inferior to the Pyramid of Cheops, which is 764 feet square at the base, and yet the diameter of 600 feet for Babil is, no doubt, in excess of its original dimensions. The accumulation of rubbish must have enlarged its base in every direction.

It seems clear, therefore, that the great structures of Chaldæa were inferior to the largest of the royal tombs of Egypt, both in height and lateral extent. We do not know how far the subsidiary buildings by which the staged towers are surrounded and supplemented in our plates may have extended, but it is difficult to believe that their number or importance could have made the ensemble to which they belonged a rival to Karnak, or even to Luxor.

If we may judge from the texts and the existing ruins, the religious buildings of Assyria were smaller than those of Chaldæa. When the Ten Thousand traversed the valley of the Tigris in their famous retreat, they passed close to a large abandoned city, which Xenophon calls Larissa. As to whether his Larissa was

[1] We take these details from Professor RAWLINSON'S essay on the topography of Babylon.

Calah (Nimroud), or Nineveh (Kouyundjik), we need not now inquire, but his short description of a staged tower is of great interest: "Near this town," he says, "there was a stone pyramid two plethra (about 203 feet) high; each side of its base was one plethron in length."[1]

The tower cleared by Layard at Nimroud is perhaps the very one seen by Xenophon.[2] The Greek soldier speaks of a stone pyramid while the Nimroud tower is of brick, but the whole of its substructure is cased with the finer material to a height of nearly twenty-four feet, which is quite enough to account for Xenophon's statement. As for his dimensions, they should not be taken too literally. In their rapid and anxious march the Greek commanders had no time to wield the plumb-line or the measuring-chain; they must have trusted mainly to their eyes in arriving at a notion of the true size of the buildings by which their attention was attracted. The tower at Nimroud must have been about 150 feet square, measured along its plinth; the present height of the mound is 141 feet, and nothing above the first stage now exists. As Layard remarks, one or two stories more must be taken into the account, and they would easily make up an original elevation of from 200 to 240 feet, or about that of the Larissa tower. Xenophon made use of the word pyramid because his language furnished him with no term more accurate. Like the true pyramid, the staged tower diminished gradually from base to summit, and there can be no doubt as to the real character of the building seen by the Greeks, as may be gathered from their leader's statement, that the "barbarians from the neighbouring villages took refuge upon it in great numbers." Such buildings as the pyramids of Egypt and Ethiopia could have afforded no refuge of the kind. A few could stand upon their summits, supposing them to have lost their capstones, but it would require the wide ramps and terraces of the staged tower to afford a foothold for the population of several villages.[3]

Nothing but the first two stages, or rather the plinth and the first stage, now remain at Nimroud of what must have been the

[1] Xenophon, *Anabasis*, III, 4, 9.

[2] Layard, *Discoveries*, pp. 126-128, and map 2.

[3] At Kaleh Shergat, where the site of an important, but as yet un-identified Assyrian city has been recognized, there is a conical mound, recalling in its general aspect the Nimroud tower, which must contain all that is left of a *zigguratt;* but no deep excavations have yet been made in it (Layard, *Nineveh*, vol. ii. p. 61).

chief temple of Calah. There is no trace either of the ramp or of the colours with which the different stories were ornamented. The Khorsabad tower discovered by Place is more interesting and much more instructive as to the arrangement and constitution of these buildings.[1]

This tower was previously hidden under a mass of *débris*, which gave it a conical form like that at Nimroud. Botta had already noticed its existence, but he failed to guess its real character, which, indeed, was only divined by Place when his explorations were far advanced. As soon as all doubt was removed as to the real character of the monument, M. Place took every care to preserve all that might yet exist of it, and our Fig. 184 shows the state of the building after the excavations were complete.

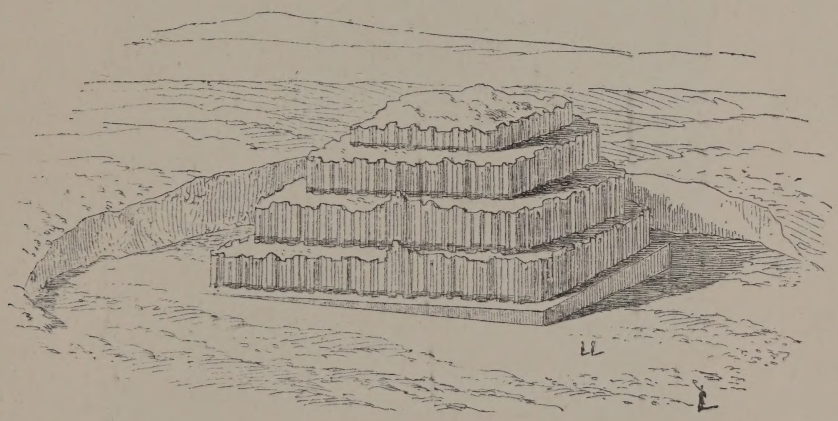


FIG. 184.—Actual condition of the so-called *Observatory*, at Khorsabad ; from Place.

Three whole stages and part of a fourth (to say nothing of the plinth) were still in existence. The face of each stage was ornamented with vertical grooves, repeating horizontally the elevation of the Assyrian stepped battlements (Fig. 102); the coloured stucco, varying in hue from one stage to another, was still in place, and confirmed the assertions of Herodotus as to the traditional sequence of tints.[2] The external ramp, with its pavement of burnt brick and its crenellated parapet, was also found.[3] At its base the first stage described upon the soil a

[1] PLACE, *Ninive*, vol. i. pp. 147-148, and plates 36-37.

[2] See above, pp. 272-274.

[3] We have already mentioned the size of its steps ; see page 192. The gradient for the first stage was about one in twenty. In the upper stages it must have been far steeper, as the circumference of the stages was much less, while their height

square of about 143 feet each way. Each of the three complete stages was twenty feet three inches high.

Upon such data M. Thomas had no difficulty in restoring the whole building. Evidently the fourth story could not have been the original apex, as it would have been strange indeed, if, when all the rest of the Khorsabad palace had lost its upper works, the sun-dried bricks of the *Observatory* alone had resisted the agents of destruction. Moreover the materials of the higher stories still exist in the 40,000 cubic yards of rubbish which cover the surrounding platform to an average depth of about ten feet.

How many stages were there? Struck by the importance of the number seven in Assyrian architecture, M. Thomas fixed

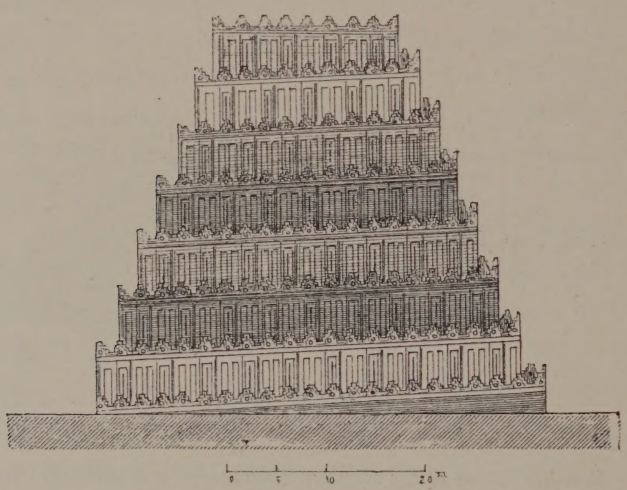


FIG. 185.—The *Observatory* restored. Elevation.

upon that number. Even at Khorsabad itself the figure continually crops up. The city walls had seven gates. One of the commonest of the ornamental motives found upon the external and internal walls of the Harem is the band of seven half columns illustrated on page 247. Herodotus tells us of the seven different colours used on the concentric walls of Ecbatana. Finally, in assigning seven stories to the building we get a total elevation of 140 feet, which corresponds so closely to the 143 feet of the base that we may take the two as identical, and account for the slight difference between them, amounting only to about

remained the same. It never became very abrupt however, as supposing that the original number of stories was seven, the gradient would not be more than about one in fourteen close to the summit.

three inches for each story, by the difficulty in taking correct measurements on a ruined structure of sun-dried brick. And we should remember that Strabo tells us in a passage already quoted that the height of the great temple at Babylon was equal to its shorter diameter, an arrangement that may to some extent have been prescribed by custom.

So far then as its main features are concerned, we may look upon the restoration we borrow from M. Place's work as perfectly authentic (Figs. 185 and 186). Our section (Fig. 187) is meant to show that no trace of any internal chamber or void

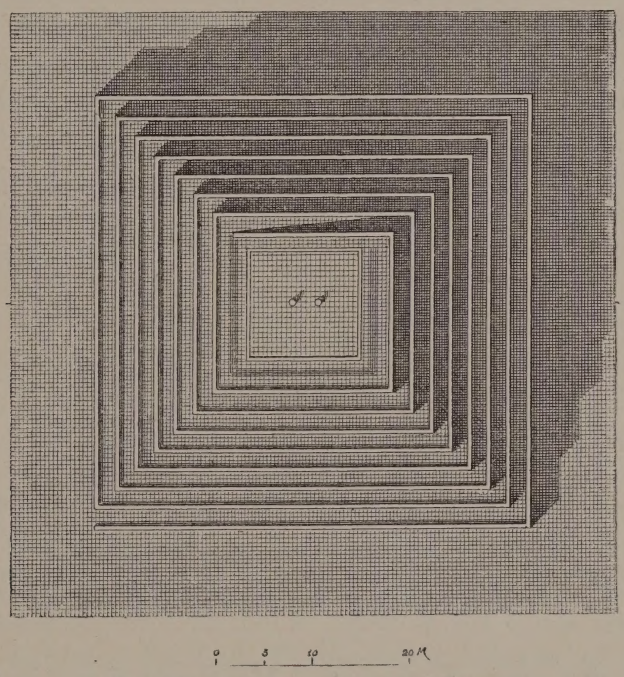


FIG. 186.—The *Observatory* restored. Plan.

of the smallest kind was discovered by the French explorers. It is, however, quite possible that such chambers were contrived in the upper stories, but we have no evidence of their existence. We may say the same of the resting-places mentioned by Herodotus in his description of the temple of Belus. But supposing that edifice to have had seven stages, its ramp must have been about a thousand yards long, and it is likely enough that halting places were provided on such a long ascent.

It is not until we come to discuss the object of such a building that we feel compelled to part company with MM. Place and

Thomas. They are inclined to believe that it was an observatory rather than a temple, and under that title they have described it. Although we have made use of the name thus given we do not think it has been justified. There is nothing, says M. Place, among the ruins at Khorsabad to show that the tower ever bore any chapel or tabernacle upon its apex. But according to their own hypothesis it has lost its three highest stories, so why should they expect to find any vestige of such a chapel, seeing that it must have been the first thing to disappear? There is absolutely nothing to negative the idea that it may have been of wood, in which case its total disappearance would not be surprising, even after the platform had been thoroughly explored; and that is far

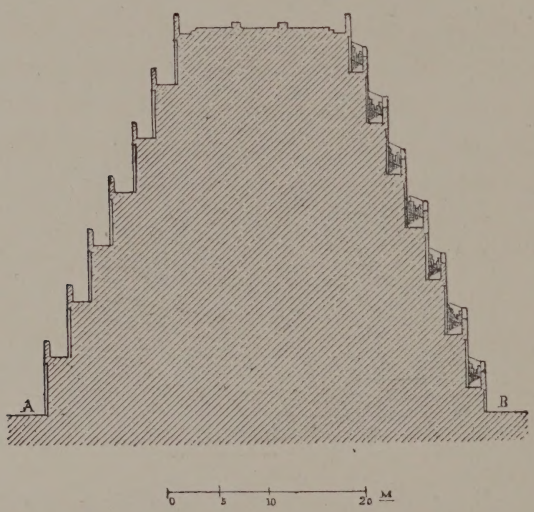


Fig. 187.—The *Observatory*. Transverse section through A B.

from being the case at present. Moreover there is some little evidence that the purpose of the pyramid was religious. Two stone altars were found in its neighbourhood. Whether they came from its summit or from the esplanade, they justify us in believing the *Observatory* to have been a temple. We are confirmed in this belief by the similarity—which M. Place himself points out—between it and the chief monuments of Babylon, as described by Herodotus. It seems to be incontestable that Chaldæa adopted this form for the largest and most sumptuous of her temples, and why should we suppose the Assyrians to have broken with that tradition and to have devoted to a different use buildings planned and constructed on the same principle?

It is true that tablets have been found in the royal archives at Kouyundjik upon which reports as to the condition of the heavens are recorded for the guidance of the king,[1] but there is nothing in these so far as they have been deciphered to show that the observations were taken from the summit of a *zigguratt*. It is, however, very probable that the astronomers availed themselves of such a height above the plain in order to escape from floating vapours and to gain a wider horizon. The platform of the Khorsabad tower must have had a superficial extent of about 180 square yards. There may have been a chapel or tabernacle in the centre, and yet plenty of space for the astrologers to do their work at their ease. We do not wish to deny, therefore, that this tower and other monuments of the same kind may have been used as observatories, but we believe that in Assyria, as in Chaldæa, their primary object was a religious one—that they were raised so far above the dwellings of man, even of the king himself, in order to do honour to the gods whose sanctuaries were to crown their summits.[2]

§ 3. *Subordinate Types of the Temple.*

SIDE by side with these pyramidal temples the Assyrians seem to have placed others of a less ambitious kind, dedicated, no doubt, to deities of the second rank. The great staged towers, whose height and mass implied an effort that could not be often repeated, were devoted to the worship of the great national gods. Botta believed that he had discovered a temple of this smaller kind in the building from which we borrowed the example of

[1] LENORMANT, *Histoire ancienne*, vol. ii. p. 200 (3rd edition).

[2] The position occupied by this staged tower in the plan of the royal palace at Khorsabad suggests that perhaps neither of the two explanations of its purpose here alluded to is the true one. It is placed immediately outside the Harem wall—and as to the identity of the Harem there can be no doubt—in such a way that any one ascending it must have had an uninterrupted view into the numerous courts of the women's apartments. Such a possibility seems inconsistent with the numerous precautions taken to secure the privacy of that part of the palace (see Vol. II. Chapter I. § 2). Perhaps the real solution of the difficulty is to be found in a suggestion made, but only to be cast aside, by Mr. FERGUSSON, that this Khorsabad *zigguratt* was, in fact, a private oratory for the exclusive use of Sargon himself (*History of Architecture*, vol. i. p. 173).—ED.

an Assyrian moulding reproduced in our Figs. 98 and 99. This edifice is remarkable, not only for its cornice, but also because it is built of limestone and decorated with sculptures carved from slabs of basalt, the only things of the kind that have been discovered in the Khorsabad ruins. The general arrangements are unlike those of any other part of the palace. Unfortunately the building is in a very bad condition. Even its plan can only be restored in part. Thomas is inclined to see in it rather a throne room, or divan, as it would be called in the modern East, than a temple. The few bas-reliefs which may be certainly recognized as having belonged to it are not religious in their character; they represent hunting scenes, battles and prisoners bringing tribute. Although Thomas's restoration is, as he himself confesses, entirely conjectural, we have no serious motive for pronouncing the building to have been a temple.[1]

On the other hand, Layard seems to have had good reasons for recognizing small temples in the structures he cleared near the great staged tower at Nimroud.[2] The more important of the two was actually touching that tower (Fig. 188). The character of the building is at once betrayed by the nature of its sculptures, which are religious rather than historical—figures of gods and genii, scenes of adoration and mystic theology. And it was not without a purpose thas it was put into close juxtaposition with a *zigguratt*, an arrangement that proves it to have formed a part of a collection of buildings consecrated, by the prince whose dwelling covered the rest of the platform, to the gods in whose protection he placed his trust. The second and smaller temple stands about thirty yards to the east on the very edge of the artificial mound (Fig. 189). An altar with three feet carved in the shape of lion's paws was found in front of the entrance.[3] There were no bas-reliefs: the decorations were carried out in paint. The number of rooms was less, but their general arrangement was similar to that of the larger building. The chief feature of both was a large hall (*e* in the first plan, *c* in the

[1] See PLACE, *Ninive*, vol. i. pp. 149-151, and vol. ii. pp. 6-7, and 36-42. This building is at the western angle of the area occupied by the Khorsabad ruins (vol. iii. plate 3). The restoration will be found in the plate numbered 37 *bis*.

[2] *Discoveries*, &c., pp. 348-357, 359-362; and *Monuments*, &c., second series, plate 5.

[3] This is now in the British Museum.—ED.

second) with a square niche at one of its extremities (*f* in the first plan, *d* in the second). This niche was paved with a single slab of alabaster, of considerable size and covered upon both faces with a long inscription describing in detail the reign of the prince by whom the temple was consecrated. In the larger of the two buildings the slab in question was twenty-three feet four inches long and seventeen feet eight inches wide; its thickness was twelve inches. Upon it stood, in all probability, the statue of the god. The niche must, in fact, have been the *secos*, or sanctuary properly speaking. The large oblong hall was the *naos* or *cella*. In the larger temple its length was forty-six feet seven

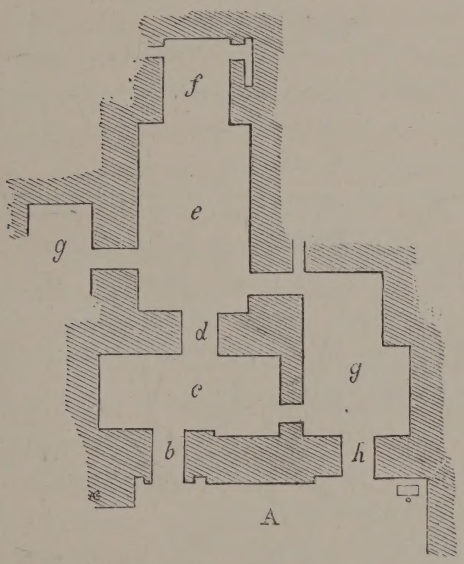


FIG. 188.—Plan of a small temple at Nimroud; from Layard.

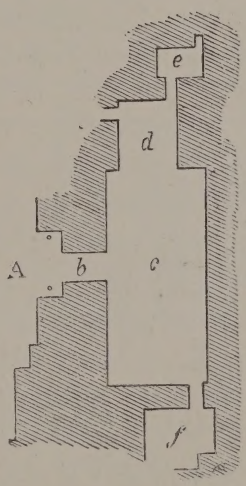


FIG. 189.—Plan of a small temple at Nimroud; from Layard.

inches. It was preceded by a *pronaos* or vestibule (Fig. 188, *c*). We have no evidence as to the purpose of the chamber marked *g* in our plan. It has a direct entrance of its own from the outside (*h*). The small temple is rather less complicated. Two doorways (*b* and *f*) lead immediately into the principal hall or naos. A small chamber (*e*) behind the sanctuary was, perhaps, a kind of storeroom or sacristy. It should be noticed that in the little temple the doors into the naos were so placed that the image in the sanctuary could not be seen from without.[1] In both buildings

[1] The doors are so arranged that in neither temple can the naos be seen by one standing outside the building.—Ed.

the doors were flanked by winged lions or bulls, like those of the royal palaces. The walls of the larger temple were decorated with glazed bricks.

These temples of the second class lent themselves to a great variety of forms. Some of them had their façades crowned by a triangular pediment, like those of the Greek temples (Fig. 190). It is true that the Khorsabad relief whence we copy this peculiar arrangement deals with the capture of an Armenian city, Mousasir,

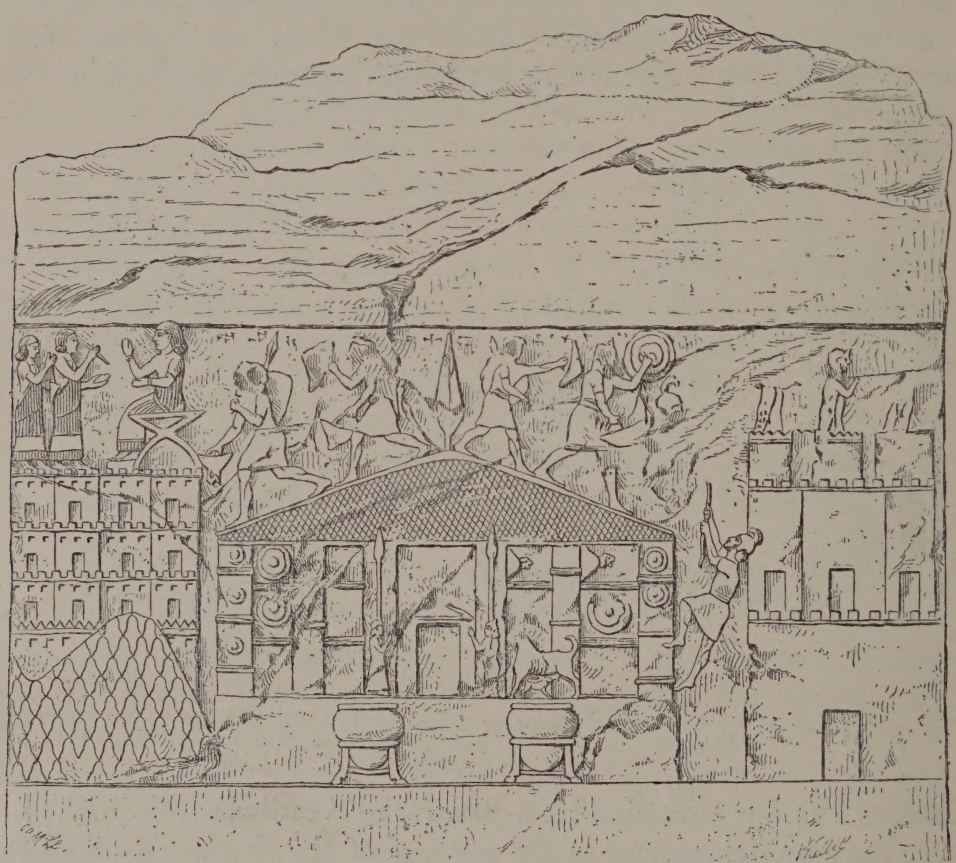


FIG. 190.—Temple with triangular pediment; from Botta.

called in the narrative of Sargon's conquests "the dwelling of the god Haldia,"[1] whose temple must be here figured by the sculptor. Must we believe that the artist has given his temple a form unfamiliar to himself in deference to the accounts of those who

[1] This expedition took place in the eighth year of Sargon's reign. The passage in which the chief events are recounted, will be found in the long and important inscription translated by M. OPPERT, under the title: *Annales de Sargon* (PLACE, *Ninive*, vol. ii. p. 313).

had taken part in the campaign? Is it not more probable that he copied some model which would be recognized by every spectator as that of a temple, from its frequent occurrence in the neighbourhood of the very palace on whose decoration he was at work? We are inclined to say yes to the latter question. But even if we look upon this relief as a faithful sketch from an Armenian temple we shall still believe that it reproduces a type not unknown to Assyrian art. Everything combines to prove that the inhabitants of the mountainous countries situated to the east and north of Assyria had no original and well-marked civilization of their own during any part of the period with which we are now concerned. Just as Ethiopia borrowed everything from Egypt, so the Medes and Armenians drew both their arts and their written character from Chaldæa, by way of Assyria. All the objects found in the neighbourhood of Lake Van are purely Assyrian in character, and no question is raised as to the fitness of their place in our museums side by side with objects from Nimroud and Khorsabad. It is, however, of little importance whether the temple shown in our woodcut was or was not copied from nature; if there were such buildings in Armenia it was because similar ones had previously existed in Assyria, from which the architects of the semi-barbarous people, who were in turn the enemies, the vassals and the subjects of the Ninevite monarchs, had borrowed their leading features.

Moreover, we find one of the most characteristic features of Assyrian architecture occurring in this Armenian monument. The entrance is flanked by lions similar to those which guard the temples at Nimroud.[1] The other features of the composition are quite new to us. In front of the temple two large vases are supported on tripods, of bronze no doubt. They contained the water required for purifications; we shall encounter them again in Syria. They remind us of the "molten sea" of Solomon's temple. The temple stands upon a high plinth, to which access must have been given by steps omitted by the sculptor. At each side of the door stands a lance-headed pole, indicating, perhaps, that the temple was dedicated to a god of war. In front of these lances stand two people in attitudes of adoration; statues, perhaps, or figures in relief. The façade is formed of pilasters

[1] The sculptor has only introduced one; the other he has left for the imagination of the spectator to fill in.

divided horizontally by narrow bands ; upon these pilasters, and on the wall between them, hang shields or targets, that accord well with the lances flanking the entrance. From two of the pilasters on the left of the doorway lions' heads and shoulders seem to issue ; these, too, may be taken as symbolical of the bellicose disposition of the god to whom the building was dedicated. The pediment with which the façade is crowned is rather low in its proportions. Its tympanum is filled with a kind of reticulated ornament made up of small lozenges or meshes. There is nothing to throw light upon the internal arrangements, but by the aid of this carved sketch the façade may be easily restored, save, of course, in the matter of size, at which we can only guess.

The type is chiefly interesting on account of its analogy with the Greek temple. We have already drawn attention to similar points of likeness in the small buildings in which the column plays such an important part (Figs. 41 and 42). We have seen that some of those little structures resemble the Egyptian temples, others the Greek temple *in antis*.[1] For the sake of completeness we may also mention the pavilion we find so often in the Chaldæan monuments (Fig. 79). It is crowned with the horned mitre we are accustomed to see upon the heads of the winged bulls. Our interest has been awakened in these little chapels chiefly on account of the decorative forms of which they afford such early examples. It is not to them that we must look for the distinctive features of Mesopotamian temple architecture. These we must find in the *staged tower* or *ziggurat*. Why is it that the whole of those monuments, with the single exception of the so-called *Observatory* of Khorsabad, are now mere heaps of formless dust, fulfilling to the letter the biblical prophecies as to the fate of Nineveh and Babylon ? One traveller tells us how when he approached the Birs-Nimroud he saw wolves stretched upon its slopes and basking in the sun. Before they would lazily rise and make up their minds to decamp, the Arabs of his escort had to ride forward shouting and shaking their lances.

[1] Page 142.

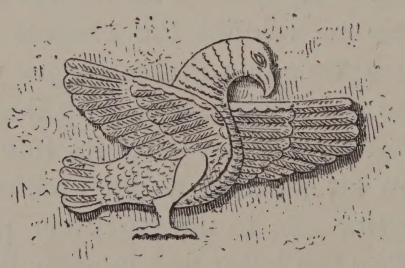
§ 4. *Comparison between the Chaldæan Temple and that of Egypt.*

ALTHOUGH the ancients called them both by the same name, there are more points of difference than of resemblance between the Egyptian pyramids and the staged towers of Chaldæa. On the borders of the Nile we have the true pyramid, the solid which bears that name in geometry. In Mesopotamia we have a series of rectangular prisms placed one upon the other. At a distance the gradual diminution of their size may give a pyramidal appearance to the mass of which they form a part, but their walls are vertical. Finally the contrast between the purposes of the two buildings is still greater. The Egyptian pyramid is a tomb; its enormous mass is no more than a monstrous development of the stone envelope to which the sarcophagus was committed. No means were provided for reaching the summit, and its height had, so to speak, no *raison d'être* or practical utility. In spite of all the art lavished upon it a pyramid was hardly a building in the proper sense of the word—it was a mere heap of building materials.

It was quite otherwise with the *zigguratt*, whose terminal platform supported a richly-decorated sanctuary. Astronomers could make use of it for observing the heavens under better conditions than were possible below; chapels were also cut in the flanks of its lower stages, so that a convenient means of approach to every story from top to bottom was absolutely required. This necessity brought in its train the varied arrangements of ramp and terrace of which we have endeavoured to give an idea in our restorations. If we give rein to our imagination and allow it for a moment to restore their crenellated parapets to the ramps and terraces; if we set up the resting-places, rebuild the chapels and pavilions and replace the statues; if we cover the sanctuary with its vesture of bronze and gold, and the whole edifice with the surface decoration to which the sun of Mesopotamia gave its fullest value, we shall then understand how far superior, as an architectonic conception, the Chaldæan *zigguratt* was to the Egyptian pyramid. With its smooth and naked face the latter was in some degree an inorganic mass, as lifeless as the corpse it crushed with its preposterous weight. The division of the former into stages had a latent rhythm that was strongly attractive; the eye followed with no

little pleasure the winding slope which, by its easy gradient, seemed to invite the traveller to mount to the lofty summit, where, in the extent and beauty of the view he would find so rich a reward for the gentle fatigues of the ascent.

But we must not forget that the *zigguratt* was a temple, and that it is to the temples of Thebes that we must compare it. In such a comparison Egypt regains all its superiority. How cold and poor a show the towers of Chaldæa and Assyria make beside the colonnades of the Ramesseum, of Luxor, of Karnak! In the one case the only possible varieties are those caused by changes in the position and proportions of the stages, in the slope and arrangement of the ramps. In the other, what infinite combinations of courts, pylons, and porticoes, what an ever changing play of light, shadow, and form among the groves of pictured columns! What a contrast between the Assyrian sanctuaries lighted only from the door and by the yellow glare of torches, and the mysterious twilight of the Egyptian halls, where the deep shadows were broken here and there by some wandering ray of sunshine shooting downwards from holes contrived in the solid roof, and making some brilliant picture of Ptah or Amen stand out against the surrounding gloom. But the Chaldæans might, perhaps would, have equalled the Egyptians had their country been as rich in stone as the Nile valley; their taste and instinct for grandeur was no less, and the religious sentiment was as lively and exalted with the worshippers of Assur and Marduk as with those of Osiris and Amen-Ra. The inferiority of their religious architecture was due to the natural formation of their country, which restricted them almost entirely to the use of a fictile material.



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